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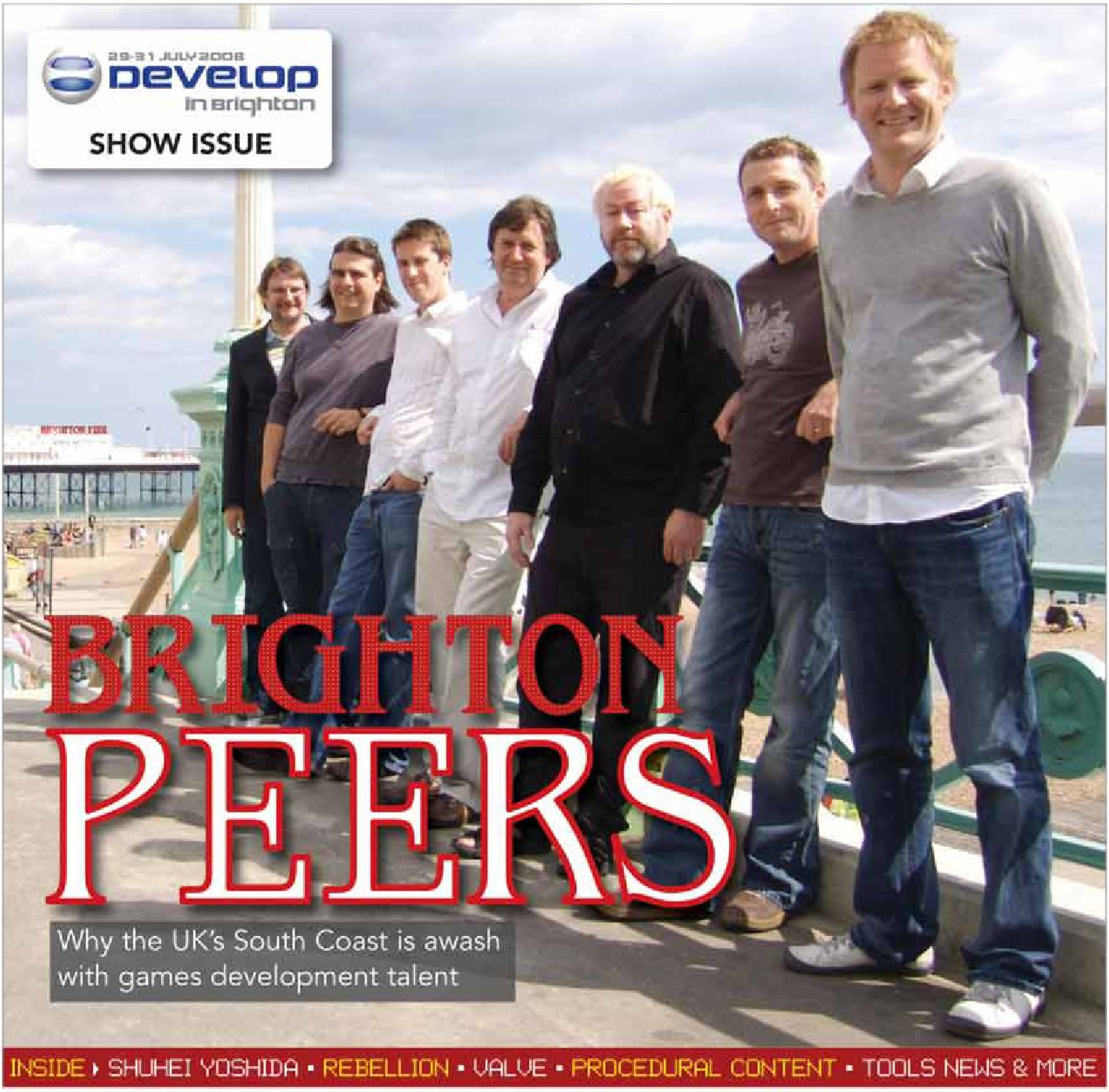

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An in-depth look at Disney's Black Rock studio

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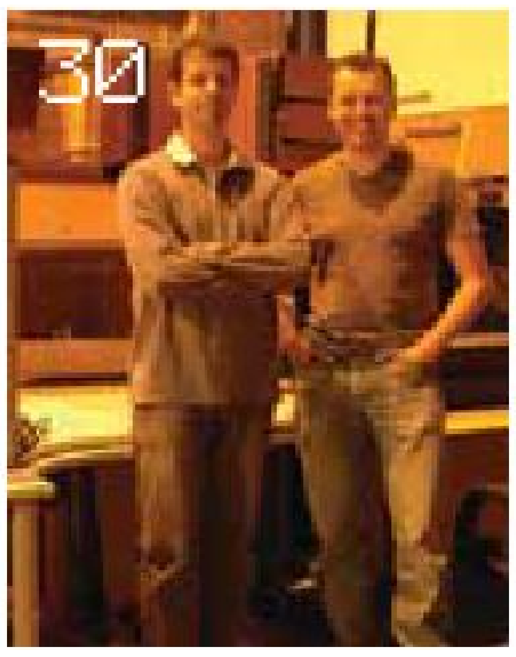

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THE INTERNATIONAL MONTHLY FOR GAMES PROGRAMMERS, ARTISTS, MUSICIANS AND PRODUCERS

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ALPHA
ADVENTURES IN GAMES DEVELOPMENT: NEWS, VIEWS & MORE

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'Tax breaks help us triumph over global games pressures'

French Ministry for the Economy says its games subsidies proves power of gaining Government support

by Michael French

THE EC-BACKED TAX credit for French games developers is now live – and the French Ministry for the Economy has told *Develop* that courting Government support is the best way for European developers to try and compete with their Canadian rivals.

Speaking to us during Paris GDC, Laurent Vannimenus, head of the multimedia and audiovisual unit at France's Ministry for the Economy, said that with the European Commission already convinced games are cultural objects meant a victory over one battle – that is, the cynicism towards games from older politicians – leaving Europe's game studios to now put pressure back on the studios in other regions which have Government backing.

The French games tax credit was agreed by the EC late last year, and went into force in June. Under the scheme, studios in the country can claim back 20 per cent of expenses – up to €3m a year.

However there is a slight catch: qualifying games need to incorporate cultural elements and not feature prominent sex or violence.

Introduing the tax breaks was in part a response to the subsidies available to developers in French-speaking Quebec region of Canada.

Those same Canadian tax breaks are also being highlighted by the UK-headed Games Up campaign.

> ***"We can use these tax breaks to make Europe more competitive…"***
> ***Laurent Vannimenus, Ministry of Economy***

"It's very surprising that Canada can help the games industry in such a big way – whereas we faced a lot of difficulties to do the same thing. I understand why we faced those difficulties, because we don't want to change the market," Vannimenus said, pointing to EC rules on market distortion.

"But if we can all use these tax breaks to make Europe more competitive against the US and Canada or even Asia it is a good thing." He added: "The main work to make the EC accept that video games are cultural is done.

"There is now a good opportunity to attract back the projects which companies like Ubisoft, and others, have placed elsewhere."

The French Government is taking its support of the games industry very seriously. The regional authorities in Paris have financially backed the shared middleware initiative Play All, while the Government is all pushing developers towards its own R&D tax credits.

Although the French tax credits scheme has only been live for a month, Vannimenus said that already the cultural criteria of the tax subsidies were already "inspiring developers" into thinking up unique ideas that boast a European theme or flavour. He added that, while the C will take a consultation in four years time to measure the effectiveness of the tax break, he and his colleagues expect the French games development sector to have grown considerably off the back of the Government's support.

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Editorial

Bright thinking

You may have noticed a certain Brighton-flavoured theme to this month's Develop, especially if you're reading this while at the Develop Conference.

And don't think it's some region-specific cash-in. Yep, timing with the conference couldn't be better, but Brighton's growth in the games sector has been almost unnatural over the past two or three years. It is fast becoming one of the country's main hubs of game development. That deserves to be celebrated, especially when the UK, although a good place to develop games, lacks some focus.

Canada has Montreal and Vancouver; Japan has Kyoto and Tokyo; and the US has hubs like Seattle, San Francisco or Austin – each country has particular cities it is proud of and promotes. And the very nature of those cities often subtly influences the games that are made there.

But what about the UK – where is its games heartland? London has its fair share of games studios, but the city is perhaps too big to unite them. Guildford now faces stiff opposition from Leamington Spa and Dundee, while the North East fights its corner.

With the greatest respect to all of the above locations, all of which are pleasant in their own right, none of them have the distinctive creative air that Brighton boasts – the same arguably bohemian attitude that can be felt in San Francisco, Seattle, Montreal or the trendy parts of Tokyo. If there's anywhere in the UK that could so easily stand amongst those heavyweights of the game development world, it's not a stretch to see that Brighton just could be it.

And it's not just me saying it – our cover feature's contributors, the companies we didn't fit in (Animazoo, Tiga, Red Bedlam and others all have offices there), plus businesses opening in the city only prove the point. So too do the popular Develop Conference and Develop Industry Excellence Awards. Whispers that more companies are to follow all that to Brighton soon is not surprising either.

Given that the city's games scene lacks its own specific agency to PR it – there's no GameHorizon or Game Republic down south (yet) – that's incredibly impressive. Especially at a time when some of the most respected and experienced industry execs say we face the threat of a games development skills and economic crisis.

Michael French
michael.french@intentmedia.co.uk

Michael

Boom time for

More talent flocks to the UK South Coast: new studio founded as

Brighton Pulls in new games team

by Michael French

ANOTHER INDEPENDENT studio has opened in Brighton, joining the likes of Relentless and Zoë Mode on the coast.

Co-founded by former SCEE man John Steels, the new studio is called Pulled Pin and is planning to develop 'traditional' multi-platform console games, but will produce them under an outsourcing model.

Studio art lead Steels, who most recently was involved with the development of PlayStation Home and previously also worked for EA and Mucky Foot, has co-founded the outfit with non-games execs David Shaw, technical director – who previously developed NASA instruments – and entrepreneur and political writer Perry de Havilland, creative director of the studio.

The team is currently developing a vertical slice of its first product ahead of pitching the concept to publishers.

> ***"Brighton has a really good infrastructure for the games industry…"***
> ***John Steels, Pulled Pin***

Explained Steels: "In previous jobs I've seen ideas get diluted quickly if you pitch a concept too early. A lot of publishers are very risk averse and for video games it's very hard for them to imagine what it would be like when it's finished. So we want to have something ready that will show what our game will be like."

When the game goes into full production, various parts will be outsourced to other companies, with Steels promising to utilise contacts made during his games career.

"Brighton has a really good infrastructure for the video games industry," added Steels. "What I like about setting up down here is that all the business are complimentary. Everyone is doing their own thing – we're a more traditional console game team, but we're there with lifestyle games studios, racing teams and MMO teams. A good thing about Brighton is that it's a good environment, with a nice shared knowledge base with little competition."

www.pulledpinproductions.com

Brighton studios

Club Penguin lands in the city, while biggest independent expands to London

Brighton
Peers

Two games firms, Pulled Pin and Club Penguin, have opened offices in Brighton – while Zoe Mode has proven so successful in the city it is expanding to London

Zoë Mode opens London studio

AS MORE COMPANIES head to Brighton, some are actually finding that the city just isn't big enough for all of its team – that's certainly the case at Zoë Mode. The party game specialist and biggest independent studio in Brighton is now planning to open a new London studio.

Called simply Zoë Mode London, the capital city spin-off of Kuju-owned Zoë Mode will initially share offices with sister studio Kuju London before finding its own permanent offices. The studio will be headed up by Zoë Mode Brighton executive producer Nick Rodriguez.

Having separate London and Brighton teams can "keep things at a relatively intimate level" explained Zoë Mode boss Ed Daly. Zoë Mode Brighton has 140 staff; the news of the new studio comes as the Brighton team prepares to move into new offices.

"We're moving into new offices in Brighton but that's going to be full from the off," said Daly. "We decided it wasn't sensible to keep growing the Brighton team, as while there is a great demand for music and party games we didn't want to compromise the culture of the studio by getting too big.

"Because London is such a big city with a diverse population I think it has the skill set for the games we make – and we'll find the right kind of people to make the games we are known for, similar to those we have in Brighton," he added.

At first, said Daly, the two studios will jointly work on some projects, "but the intention is that projects will be lead out of London separately from Brighton – it's important that the team has local ownership and product relationships."

The new studio is set to open in September.

www.zoemode.com

Penguins build new South Coast Club

MEANWHILE BACK IN Brighton: it's become clear Disney isn't happy with just one office in the city (racing team Black Rock): it has opened a new office in the region for its Club Penguin youth MMO.

For the past few months the firm has been building a local services team in Brighton that consists of moderators.

Landing in Brighton isn't just a move to tap into the local talent base, but also a cultural choice that will assure parents of kids which use the ad-free online world that it is safe to use.

"With so many of our players living in the United Kingdom it makes perfect sense to open an office here," commented Lane Merrifield, general manager of Club Penguin and executive vice-president, the Walt Disney Internet Group. "We hope it gives parents in the UK peace of mind to know the team in Brighton is online keeping an eye on things."

www.clubpenguin.com

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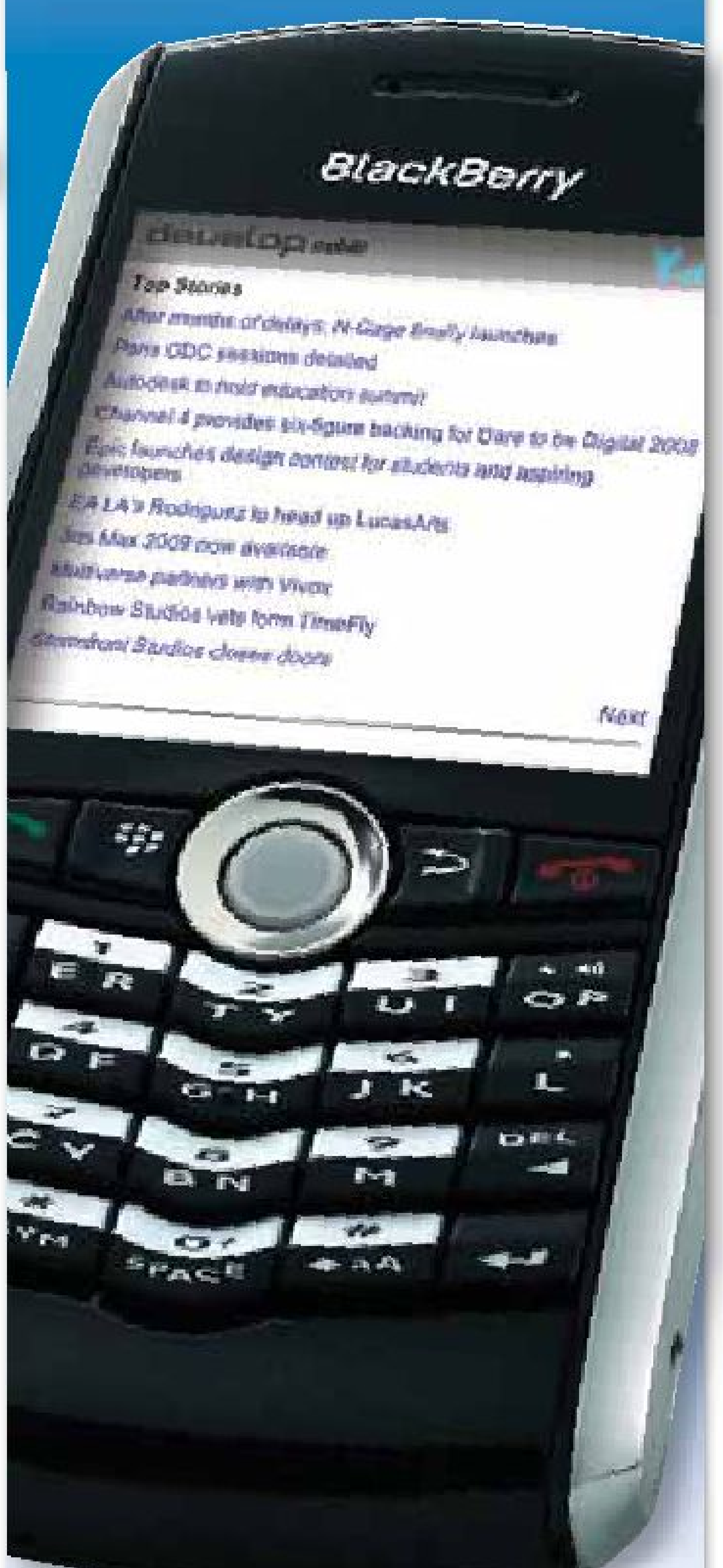

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GLENDALE, CALIFORNIA

A leaked memo from Disney CEO Bob Iger last month revealed that Disney has combined its Interactive Studios operation, which includes the likes of Warren Spector's Junction Point, Black Rock, Propaganda and a publishing outfit, with its MMO and mobile unit Walt Disney Internet Group.

Called the Disney Interactive Media Group, and unified effective immediately, the move comes to "take advantage of rapid advancements in interactive digital media across all platforms as well as the convergence of connected console, Internet and mobile-based games," Iger said in the communique with Disney staff.

It sounds like little else will change, except for the fact Disney now boasts a centralised games interest, as Iger said "existing management teams will continue to run the combined group."

Steve Wadsworth, former head of the Walt Disney Internet Group will step up to lead this new combined business, working with current Interactive Studios head Graham Hopper to "optimise new opportunities" the doubled-up team up creates.

The new unit, Iger added, "will have global responsibility for development and distribution of all Disney-branded interactive digital media and entertainment for all digital interactive platforms".

www.disneyinteractive.com

SAO PAULO, BRAZIL

The march of Ubisoft across the globe continues as the French publisher this month announced plans to open a studio in Brazil, the 20th of its studios.

Based in Sao Paulo, Brazil, the new development team is Ubisoft's first studio in South America. The outfit will open in late July with 20 staff and will grow to 200 in the next four years.

Ubisoft said the opening wasn't just a numerical milestone, but a territorial one, with the firm boasting studios in five continents now.

Speaking with the Brazilian press, studio head Bertrand Chaverot also said that Ubisoft is looking to have two more studios in the region – potentially in Rio de Janeiro and Florianópolis next.

"The cultural richness of Sao Paulo, coupled with its leading university network will bring a unique set of fresh talent to Ubisoft's development community," said Christine Burgess-Quémard, executive director of Ubisoft's worldwide studio operations.

www.ubisoft.com

WISCONSIN, USA

The state of Wisconsin has introduced a tax credit for the film, television, and video game industries.

Qualifying developers are eligible for a 25 per cent rebate on production-related expenses, plus a 15 per cent credit for infrastructure development in the scheme, which aims to make Wisconsin 'a new Mecca for game development'.

The region's biggest developer is Raven Software, an internal Activision studio, and its spin-offs Human Head and Big Rooster. Several Wisconsin schools have also recently increased their game development course offerings.

Speaking about the tax credit system, Raven's director of product development Mike Crowns said: "I truly believe that the tax incentive will greatly assist the growth of game development in the State of Wisconsin."

www.wisconsin.gov

PRAGUE, CZECH REPUBLIC

Eastern European games publisher 1C has announced its first games developed for multiple platforms – and revealed it is targeting global growth with the two games.

Internally-made Captain Blood is a Xbox 360 and PC Caribbean-themed game inspired by the novels by Rafael Sabatini.

"1C is using cutting-edge technology, including the amazing power of modern consoles, to bring superior games to every market," said Nikolay Baryshnikov, International Sales Director at 1C Company.

"Our aim is to bring our games to even more players and expand our vision with cross platform development. We are embracing new technology that will improve our products including digital downloads, consoles, handheld gaming, Epic's Unreal 3 Engine, NVIDIA PhysX and DirectX 10."

Meanwhile the firm has also signed up Gaijin Entertainment, DiP Interactive and DYNAMICSYSTEMS for development work on IL-2 Sturmovik: Birds of Prey. The new game will hit a number of systems, with the SKUs developed by Gaijin Entertainment for Xbox 360 and Playstation 3, by DiP Interactive for Nintendo DS and by DYNAMICSYSTEMS for PSP.

In officially announcing the new titles, the firm said the games "mark the first cross-platform games from 1C to be developed and published worldwide."

www.1cpublishing.eu

GLOBAL REPORTS

UK: RAZORWORKS

Publisher Empire Interactive this month announced that it was to sell off or shut down Razorworks, its internal development studio based in Oxfordshire. Just as this issue went to press, Empire released a statement saying that it was "currently in negotiations" with potential Razorworks buyers and was hopeful of completing the transaction "in the coming weeks".

www.razorworks.com

UK: VENOM

And on the subject of UK studio closures, at the time of press CVG was reporting that Newcastle-based studio Venom is to close at the end of the month, although no official word has come from either the studio or its parent 2K Games. The studio, which has around 30 staff, had just finished work on the Xbox 360 version of *Don King's Prizefighter*.

www.venomgames.co.uk

US: YOUNG UPSTART

EA exec Neil Young, most recently a head of EA's social network-focused Blueprint team, has left the publisher after 11 years to found a new iPhone publisher ng:moco. "I think with this device mobile phones have crossed a threshold of usability," he told Gamasutra. Westwood founder and *Boom Blox* exec. producer Louis Castle will step up to head Blueprint.

www.ngmoco.com

UK: REALTIME FUNDING

Seems like Realtime Worlds is happy to share all that venture capital love – the studio has donated $1,000 to an APB fansite that was seeking contributions to help it buy a dedicated server. "Realtime Worlds feels you should all be able to focus your efforts on continuing to build and run this awesome site," said community relations manager Chris Dye.

www.realtimeworlds.com

US: MICROSOFT SHUFFLE

It's not just EA that's had a bit of a switch-around this month: Microsoft Game Studios boss Shane Kim was promoted to a biz dev position, leaving former MGS Europe studios manager Phil Spencer to take up his role and relocate back to the US. Both will now report directly to Don Mattrick. The search is on for Spencer's EMEA replacement.

www.microsoft.com/games

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News

'Complexity not welcome in iPod titles'

Harmonix – the studio behind the original *Guitar Hero* and its recent rival *Rock Band* – has painted a picture of making games for the iPod, singling its users out as ultra-casual consumers of games.

Speaking at Paris GDC in a talk about the development of Harmonix's iPod music game *Phase* the studio's Chris Foster – designer and programmer of the game – outlined lessons the MTV-owned studio learned in making one of the first original IP titles to be made for Apple's music player and sold via iTunes.

Phase uses the music tracks stored on players' iPod hard drives to generate levels. The game was released last year – to good sales, said Foster.

But the people playing games on their iPods don't fit the 'gamer' label, he stressed.

"The audience for iPod is different to that of the PSP and DS. The iPod user is not necessarily a gamer.

"Complexity is not welcome on the iPod.

"The user of an iPod would not necessarily invest in fun," he added, pointing out that iPod users are more likely to spend money on music tracks than games.

He added: "iPod users are listeners first and players second. No one will play on an iPod for an hour – maybe ten minutes or just three for a single song while they wait for the Metro."

These principles were crucial when it came to designing a game for the iPod, he added:

"Embrace your platform's limitations and audience. Don't try to cram in ideas that are not suitable," he said, pointing out that much of the success of *Phase*'s gameplay came not from its clever use of using players' music, but from designing something that took advantage of "the pleasantly tactile" scrollwheel on the iPod.

He added: "Great game design is making bad decisions in pursuit of good ones.

"It's about making a bad decision and sticking with it until you get to the right one. It can be emotionally draining, but that's what leads you to the things that are good, unique and right."

Interview

Ubiquitous strategy

Ubisoft has had one of the most sudden and widespread casual strategies in gaming of late. The publisher's product director of third-party for EMEA, **Stephane Decroix**, tells CasualGaming.biz why that's just the beginning…

On the casual side, how can you see the boxed product market evolving over the next year?
I imagine that for the time being we are only touching the very beginning of its potential. We've only really had the first year of this new market; next year, the second, will be even more exciting. We will touch with wider demographics – we're working on things that can achieve that which I can't talk about right now. I can say that the girls who used to play the likes of *Horsez* and other *Petz* games – eight year-olds – are growing up and demanding more from their gameplay experience. We have to respond to that.

Maybe they're seeing their brother playing on traditional games and getting more demanding through that?
Very possibly, yes. But it goes further than that. It comes down to experience; we're trying to make our new Games For Everyone games very high quality. Players are expecting more from the graphics and want to have a more immersive time with their DS or whatever.

Do you think you're going to have to invest more in terms of money and time into casual games?
I think so, on both counts. We want to raise the quality. That doesn't only come from the production values, but also from the time we spend on the concept, the interaction. That's maybe not quite as true for graphics – we have to be wise with how we spend the money.

Games For Everyone is obviously geared to touch non-traditional markets. Are there still demographics left for you to 'discover'? If so, how can you reach out to them?
For the time being, in my team we decided to focus more on the kids because it would be easier to get them to come back to the products than perhaps an older audience. We had to be more precise about what we were offering, and we've decided to aim it at that market. They are the ones who will grow up with the product. We know the 15-25 year-old male, we know those people very well, but the 'tweens' – the girls who are a few years younger – that's something we have to be reactive to.

> *"We're definitely working on iPhone and iPod touch, but it's very early days on those…"*

Which consoles do you think can help you reach these audiences?
I don't know much about the side of the cellphone side of business. We're definitely working on iPhone and iPod touch, but it's very early days on those. Maybe we won't just stick to casual games on those, there is room for other kinds of games – bringing in our other brands. Right now, we're at the very beginning and working out what we can do.

How about a casual games portal on the web?
This is something we are looking into, because online is of great interest and is one of the new major platforms. For now, we stick on Wii and DS because the social potential is already there, whilst on PC we have a way to go. I think we have a different approach than EA and Pogo.com when it comes to casual – the word means different things to us. Wait and see.

What sets Ubisoft apart when it comes to understanding the casual audience compared to other publishers who may have been more successful in other areas?
When it comes to Nintendo platforms, we were there at the very beginning. Ubisoft have always prided themselves on creativity and quality, and we carry those principles through to casual as well. We go where there are no boundaries and no rules.

#1

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‘Je voudrais une petit équipe’

PARIS GDC REPORT: The message was clear at France’s second GDC – developers prefer working in small teams

by Michael French

Paris GameDevelopers Conference 08

Media Molecule’s Mark Healey and Alex Evans were the first to put their hands up in favour of small team sizes

YOU MIGHT HAVE BEEN expecting Paris GDC to have come and gone with a customary, nonchalant French shrug, but throughout the June event one message was loud and clear – developers the world over prefer working in smaller teams.

That was the running theme at last month’s first Game Developer Conference in the French capital. Although it was pitched to cover the core and casual games markets, attendant speakers seemed to unofficially unite with a clearer message: that small teams drive innovation, creativity and good ideas.

“I think there’s a misconception in the games industry at the moment that you need 200 people to make a game now because technology is so amazing,” said Media Molecule’s Alex Evans, pointing out that his studio had just 30 staff, even though it is working on one of the most awaited PS3 titles, *LittleBigPlanet*. “But actually, some of the recent very successful games had teams of about four or five people – for example, *Brain Training*.”

Similar sentiments came from within Sony – its *SingStar* team consists of just 40 people, and not all of them traditional ‘developers’, either.

Senior producer of the franchise Tamsin Lucas described her colleagues as a group of “people you wouldn’t normally find on a game team”, who work so efficiently – 116 discs of music content produced for the franchise in just four years – thanks to a highly structured and sometimes outsourcing-supported production cycle.

Non-Sony firms were also sounding the call, a with representatives from different continents echoing the benefits of smaller team sizes.

Ben Cousins of Stockholm’s EA DICE explained that upcoming free-to-play shooter *Battlefield Heroes* was created by a small team using the studio’s internal technology.

Chris Foster from Harmonix, meanwhile, in discussing the development of iPod game *Phase* was also talking up the benefits of smaller-scale development for bigger rewards – he was designer and programmer on the game working with a skeleton team.

However, studio execs were keen to sound some caution on this much-desired but hard to control issue. In a panel discussion with Kuju’s Ian Baverstock and Quantic Dreams’ Guillaume de Fondaumiere, Chris Mottes of Deadline Games said that specialism in development roles was driving growth in team sizes, and isn’t that reversible. “Everyone has to be really skilled in development from all sides now – you can’t have a programmer employed that doesn’t know what the animator is doing, but you could get away with that in the old days.”

DEVELOP DIARY

YOUR COMPLETE GAMES DEVELOPMENT EVENT CALENDAR FOR THE MONTHS AHEAD…

DEVELOP CONFERENCE
July 29th to 31st
Brighton, UK
www.developconference.com

The big week for UK and European games developers takes place in Brighton at the end of the month. The Develop conference runs for three days, with online, mobile and education conferences on the first day with the main conference and expo running on the following days.

DEVELOP AWARDS
July 30th
Brighton, UK

developmag.com/develop-awards
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JULY 2008

VISUAL WEB CONVENTION
July 9th to 10th
London, UK
www.viswebconvention.com

E3 SUMMIT 2008
July 15th to 17th
Los Angeles, USA
www.e3expo.com

DEVELOP CONFERENCE
July 29th to 31st
Brighton, UK
www.developconference.com

DEVELOP INDUSTRY EXCELLENCE AWARDS
July 30th
Brighton, UK
www.developmag.com/develop-awards

XNA GAMEFEST
July 22nd and 23rd
Seattle, USA
www.xnagamefest.com

CASUAL CONNECT AMERICA
July 23rd to 25th
Seattle, USA
seattle.casualconnect.org

AUGUST 2008

XNA GAMEFEST UK
August 6th
London, UK
www.xnagamefest.com/UK.htm

SIGGRAPH 2008
August 11th to 15th
Los Angeles, USA
www.siggraph.org

GCDC 2008
August 18th to 20th
Leipzig, Germany
www.gcdc.eu

GAMES CONVENTION
August 20th to 24th
Leipzig, Germany
www.gc-germany.com

SEPTEMBER 2008

WOMEN IN GAMES
September 10th to 12th
Warwick University, UK
www.womeningames.com

AUSTIN GDC
September 15th to 18th
Texas, USA
www.gdconf.com

CHINA GDC 08
September 24th to 26th
Beijing, China
www.gdcchina.cn

NOVEMBER 2008

GAME CONNECTION
November 5th to 7th
Lyon, France
www.game-connection.com

MONTREAL GAMES SUMMIT
November 6th and 7th
Montreal, Canada
www.sijm.ca/2008/

GAME CONNECT: ASIA PACIFIC
November 19th to 22nd
Brisbane, Australia
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GDC 09
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VARIABLE DECLARATIONS

by Owain Bennallack

Develop in Brighton: Developers are doing us proud

I'VE BEEN FORTUNATE ENOUGH to once again chair the Steering Committee for the Develop in Brighton conference this year, which takes place from July 29th to 31st. Helping pull together speakers for the conference has proved the usual mixture of relieved high fives as great speakers have signed up, together with a little frustration at the inevitable ones that got away.

Overall, thanks to the generosity of the speakers, I'd say Develop in Brighton's line-up is bested only by the illustrious GDC in terms of volume, and I hope we're on a par on quality. Add the attractions of laid back Euro-style networking beside the seaside, the Develop Awards, and the absence of an 18-hour trans-Atlantic journey, and the case for every European developer spending time with us is strong.

I would say that, wouldn't I? Well, the truth is I had some qualms when the idea of a large games development even in the UK was first floated. Happily, I was wrong.

BRITS NOT SO SOFT

My principle concern was that the majority of games developers in Western Europe are British, and Brits don't all begin training in pre-school for their moment in the spotlight. Whereas even post-presentation Q&As at US events can seem like mini-operas, the typical UK developer prefers to keep his or her head down. In addition, I wondered about the sense of community in Europe, and in the UK in particular.

It's a decade since I saw firsthand how much more professional US games studios were in those days, compared to their equally talented but often wildly disorganised British counterparts. The consequences are well-known, with UK studios relentlessly consolidating or going bust in the early years of the century to leave those who rose to the management challenges and now out-compete their international rivals – despite lacking the Government or homegrown publisher support – or who've found success within a larger developer or foreign publisher.

But 'growing up' wasn't the only way the Americans were ahead of the game. More recently it struck me how much more community-focussed North American developers seemed. They appeared happier to share experiences, techniques, and even technologies and staff than UK outfits, especially senior management. Another clue – they used the word 'we' a lot when speaking at shows, referring to development population at large, rather than just their own company. And they were stronger for it.

My issue wasn't only that what I perceived as the UK's relative insularity would prove self-limiting for its studios – I wondered if it would make it impossible to find sufficient UK developers willing to share their thoughts with their peers.

On balance I was overly cautious – as demonstrated by the embarrassment of talent we're again welcoming to Brighton. Still, it's certainly true that some UK companies have seemingly decided the benefits of speaking at European conferences are just too intangible, compared to the more immediate pressures of working life. A few also seem to believe they'll suffer some competitive disadvantage by sharing. Hardly a problem that's dogged top US legends like Will Wright or Bioware's Ray Muzyka and Greg Zeschuk, but there you go.

It's certainly not for me to tell them how to run their business – the onus is on us to make Brighton something every single studio wants to get involved in. 2008 should hopefully be another step towards that.

> ***"Overall, thanks to the generosity of the speakers, I'd say Develop in Brighton's line-up is bested only by the illustrious GDC in terms of volume and we're on a par on quality"***

EURO CHAMPIONS

If someone had told me three years ago that this year's conference would boast a keynote including not just Ken Levine but all his Bioshock leads, that we'd welcome an A-list of British companies including (in no particular order) Frontier, Traveller's Tales, Rare, Ninja Theory, Lionhead, Realtime Worlds and many others to the stage, that US speakers from Bungie, Naughty Dog and more would fly over to join us, that Microsoft would again send one of its top generals and seemingly half of SCEE would mark out Brighton on their calendars, that not one but two Japanese developers would present sessions, or that our inaugural online day would include presentations from heavyweights like Jagex, CCP, NCSoft and Linden Labs – not to mention the return of our already-established mobile day and an association once more with GAMES: EDU – well, I'd have given you a moment to catch your breath.

That's not to blow our trumpet – it's to urge any stragglers to book their place. It's game developers who deserve the plaudits, anyway, for rising to the challenge and agreeing to reveal a little about what they've learned with us. See you there!

Owain Bennallack is executive editor of *Develop*. He edited the magazine from its launch until its February 2006 issue. He has also worked at *MCV* and *Edge*, and has provided consultancy and evaluation services to several leading developers and publishers. He is also chairman of the *Develop* conference advisory board.

DESIGN DOC

by The Alpenwolf

Q&A: Funcom's Age of Conan

MMO LIMITS: The success of Age of Conan demonstrates that a strong licence, combined with innovative gameplay can be a winning combination

Gaute Godager is the Game Director for *Age of Conan: Hyperborean Adventures*, Funcom's million-selling fantasy MMO...

What was the rationale behind going with a licence for your first big fantasy MMO?
With the exception of *Eve Online*, which has perhaps one per cent of the market, all of the big MMOs were fantasy MMOs. We said, okay, let's look at the ones that succeeded. With the exception of *Everquest*, the successes were all licences that been created before. With that in mind, we said, let's boost our chances of success by picking a licence that can give us some marketing. From the creative point of view, what was important to me was to have a licence that wasn't limiting, but rather liberating for how you approached the game.

You considered a lot of licences before settling on Conan. What were some of the more interesting ones you considered as possibilities?
I think we went through most of the fantasy literature that hasn't been used yet. You must understand that we weren't in negotiations on any of these, we were just discussing them as possibilities. We were talking about *Thieves World* and George R.R. Martin's novels, the *Songs of Fire and Ice*. But we wanted to do something different, something that was less generic High Fantasy, something with an edge, with an attitude. Conan was a great tool for me to be able to focus gameplay. Before we obtained the licence, I had some things I wanted to do gameplay-wise. I wanted to do something new and exciting in combat, I also wanted to have some social structures in place for social engineering, in terms of not being tossed into a world without meaning.

What was the biggest design challenge for you in *Age of Conan*?
The biggest design challenge for me is always finding the perfect balance in terms of the degree of innovation that you do. I'm inherently wanting to innovate; I want to do things differently when I don't really have to. The biggest challenge for me is to find the right amount of innovation and then stick with that.

> ***"We went through most of the fantasy literature that hasn't been used yet. I wanted to do something new and exciting in combat..."***

I was a bit surprised that some of your key layouts were a bit different to WoW and LOTRO. Is that your innovative streak showing through?
I don't think so. My philosophy on key layouts and controls is that we should not do anything different than what has become standard. If you look at the shortcuts, I think the only change we have is inventory being the key; our code was based around the *Anarchy Online* tools and somehow it didn't get changed. Things like that, I'm very pragmatic. The one thing I really wanted to innovate on was the combat and I think we had 10 different innovations in the combat system. In many areas, I left decisions up to the managers... that let me focus on innovating in the important areas.

What design element did you want to incorporate into the game that didn't make it into the initial release?
I think the biggest thing that I wanted to do and didn't get in is something I call 'kinship'. It's something that I want to do very very soon and it will be coming out. It's basically a system where you let guilds enter alliances and through that system have a deeper sense of purpose in PvP and PvE. You sort of build around the whole alliance system in order to give people a chance of development. It's an embodiment of social relationships on a macro level.

People are excited about mounted combat and they've waited a long time for it. What was the main factor in deciding to make the character and mount a single entity for damage purposes?
It was control and targeting, to be very honest. You know that in *Age of Conan*, the default target is the one in front of you. Since horse and rider occupy the same horizontal position, the horse would be the natural default but that doesn't make any sense since you want to go after the rider. Making the character the auto-selected target makes more sense, but then, what if someone kills the horse anyway? That's horrible economic loss for the player, who would lose a tremendous amount of money. Then you have to give the horse tons of hit points and all the smart guys will be going for the rider anyway. So, we decided to keep them together and see the horse as more of an inherent mode of transportation. Besides, in a game like *Age of Conan*, you really want to keep the control issues simple; you don't want to force players to struggle with the controls.

The Alpenwolf is a professional game designer who has been active in the industry for 17 years and designed games for some of the largest American and Japanese publishers. He has been known to visit Ironforge in the company of a large white wolf. design@alpenwolf.com

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SHERIDANS

Developers and debt recovery

It's vital that games developers pursue any late payments, but legal proceedings should be the last resort, says **Tahir Basheer**, partner at media law firm Sheridans…

***Tahir Basheer** is a partner at Sheridans, the entertainment law firm. tbasheer@sheridans.co.uk*

Games developers tackle difficult problems – physics simulation, artificial intelligence, interactive storytelling. Yet for those who run games studios, securing money owed in a timely fashion can be the hardest job of all.

Most developers have felt vulnerable awaiting payment from a usually far-larger publisher. After months or years of chasing a deal, small developers frequently start projects in a financially precarious position, while a lack of contingency funds can see even larger outfits living from milestone to milestone. Late or disputed payments can send outwardly successful developers into dire financial straits.

Game developers do have some cards to play, however. The publisher will (at least initially) want its game completed on time and to budget, and since the track record of games started at one studio and finished elsewhere is not an illustrious one, it's in its interest to preserve a working relationship.

The law is on the side of creditors, too. Developers should certainly not rush to the courts; legal procedure requires other avenues be explored first, and besides, valuable business relationships deteriorate rapidly against a backdrop of escalating legal fees. But a mutual understanding of the mechanisms of debt recovery can help forestall problems.

PAYMENT PROTECTION

Closely monitor your cashflow and ensure invoices are being paid when they become due.

Payment terms and late fees should be agreed in advance of any work, in writing. The date by which payment must be made and the consequences of late payment should be expressly stated. Failing that, reach agreement in relation to fees before issuing an invoice.

In the absence of any other express written agreement, a supplier can also rely upon late payment legislation. This provides a default period of 30 days by which fees are to be paid, and allows you to claim interest on late payments, together with a modest charge to cover their collection.

BETTER LATE THAN NEVER

Any supplier owed money should consider the following steps before initiating costly legal proceedings:

1) The first step should be a conciliatory approach. Besides potentially saving the loss of a customer and keeping costs down, the law requires you to try alternative dispute resolution processes before litigation.

2) A third-party may be called in to broker a compromise between supplier and the purchaser.

3) A less costly alternative to legal proceedings is the service of a statutory demand on the purchaser. The latter gets 21 days to make its payment, after which time you can petition for bankruptcy or liquidation, as appropriate. To be entitled to serve a statutory demand, the fees must not be in dispute.

4) Before initiating legal proceedings, determine whether your debtor is sufficiently solvent to pay you. If it isn't then winning in court is of no commercial benefit.

A court Judgment against a non-paying party is a significant penalty. A County Court judgement remains on record for six years, and can hinder applications for credit, while continued non-payment allows you to seek redress through bailiffs, charges against property or earnings, or third-party orders (where the debtor is owed money by someone else).

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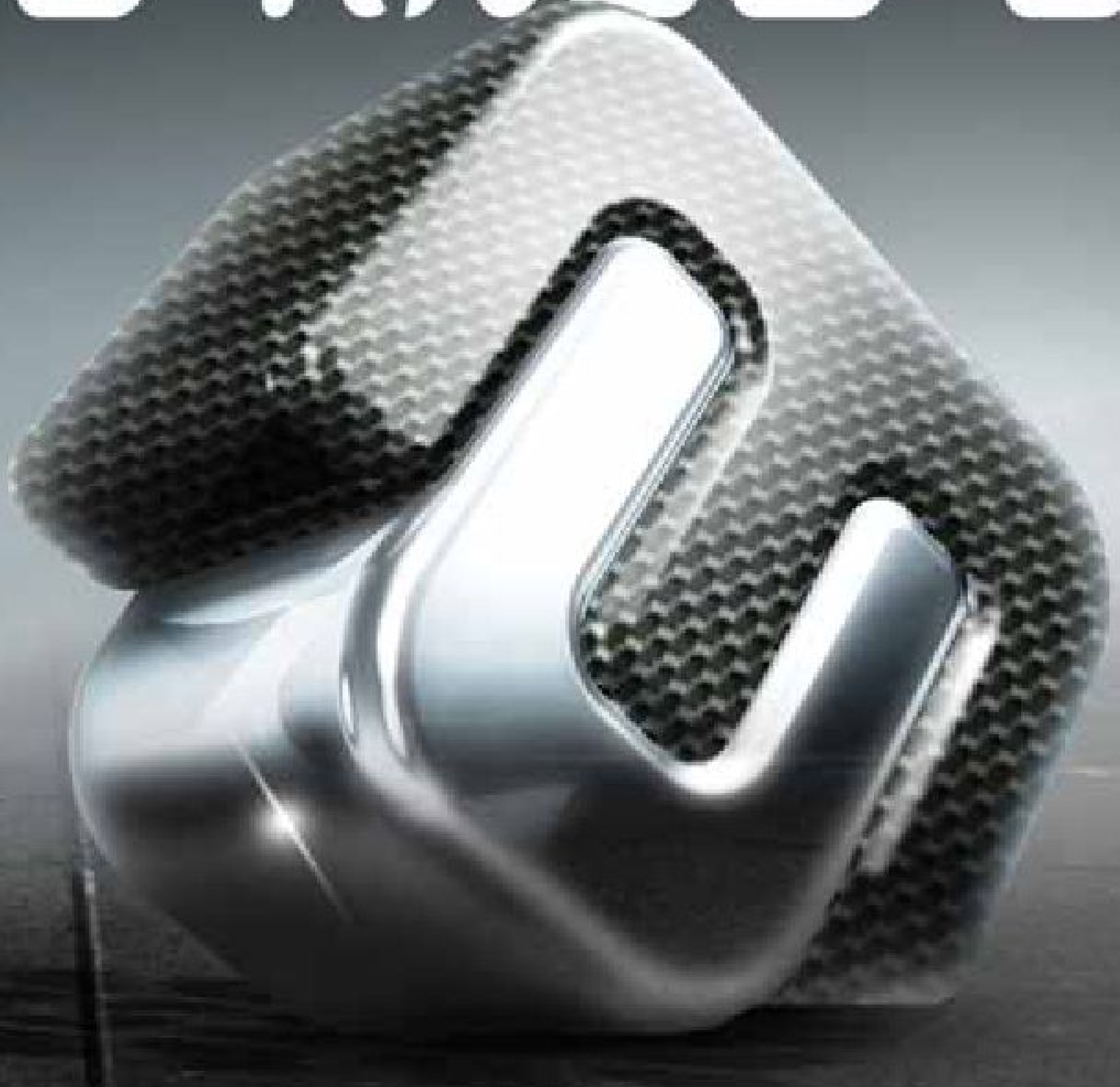

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Actual Xbox 360 screenshot

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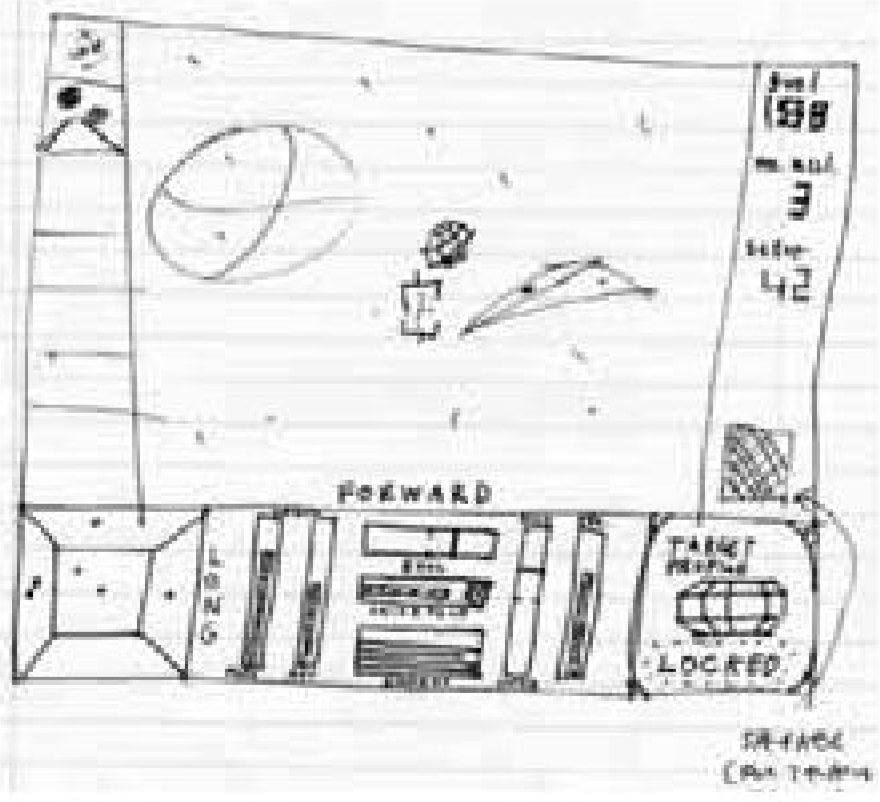
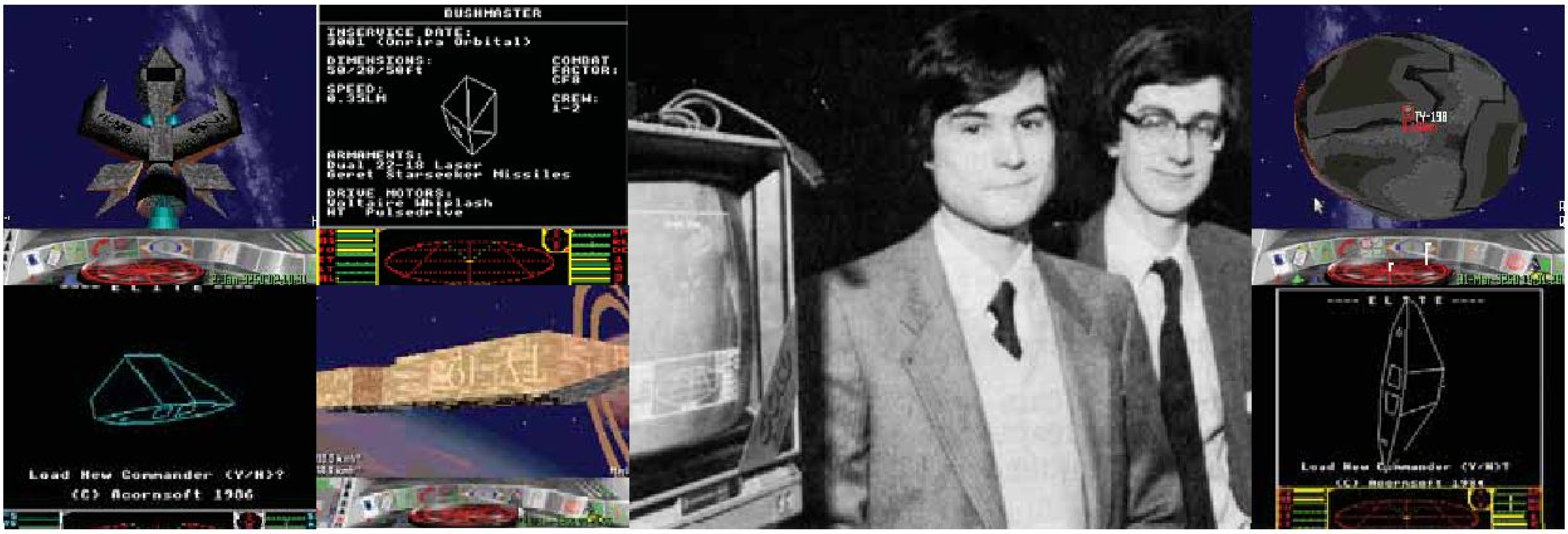
GREATBRITISHGAMES



Elite

Nick Gibson charts the history of a Britsoft classic that remains a unique and uncopied experience to this day…



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BUSHMASTER
INSERVICE DATE:
3001 (Onrira Orbital)
DIMENSIONS:                 COMBAT
50/20/50ft                  FACTOR:
                            CF8
SPEED:
0.35LM                      CREW:
                            1-2
ARMAMENTS:
Dual 22-18 Laser
Geret Starseeker Missiles
DRIVE MOTORS:
Voltaire Whiplash
HT  Pulsedrive
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Load New Commander (Y/N)?
(C) Acornsoft 1986
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Load New Commander (Y/N)?
(C) Acornsoft 1984
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ELITE – THE STATS

ESTIMATED TOTAL UNIT SALES:

1.6 million+

NUMBER OF ITERATIONS:

Three games (and over 20 SKUs, many with minor alterations)

GAME RELEASE TIMELINE

1984: *Elite*
1993: *Frontier Elite: 2*
1995: *Frontier First Encounters*

OWNERSHIP HISTORY

1984: Elite created by Ian Bell and David Braben.

1988: David Braben secures exclusive sequel rights to *Elite* from Ian Bell in return for ten per cent of David Braben's net receipts from the first sequel. Subsequent sequel rights were granted by Bell to Braben royalty free.

1993: *Frontier Elite: 2*, the first official sequel to the original *Elite*, released.

1994: Frontier Developments incorporated, starts development of *Frontier First Encounters*, the first *Elite* title for which David Braben is the sole copyright holder. Ian Bell challenges David Braben over the ownership of the *Elite* IPR. This eventually leads to litigation by David Braben against Ian Bell.

1999: A new IPR ownership spat is initiated when David Braben challenges a website run by Ian Bell from which material from the original *Elite* can be downloaded for free. This is eventually resolved in 2000.

CREATOR: David Braben and Ian Bell

Elite was created by Ian Bell and David Braben whilst they were undergraduates at Cambridge University.

The first version was written for the BBC Micro computer and was published by Acornsoft (maker of the BBC Micro) after it had been rejected by Thorn EMI. *Elite* was space-trading and combat game set in a colossal (even by today's standards) game universe that comprised eight galaxies and over 2,000 visitable worlds. The aim of the original game was to advance characters through a series of ranks (based on ship kills), accumulating wealth and possessions along the way.

Unlike most games of the time, *Elite* featured non-linear gameplay similar to many role-playing games. This gave players the flexibility to explore the *Elite* universe, and reach new ranks and levels of wealth in whichever way they chose. Thus players could opt to pursue both legal and illegal trading activities, become a pirate or bounty-hunter or undertake military missions or even mine asteroids for valuable minerals. As such, *Elite* did not actually have an ending as players could continue to play in the game universe even after they had attained the highest rank. *Elite* is also noted for featuring a number of novel technologies including 3D (wire-frame) graphics, procedurally generated worlds (necessary for such an expansive game universe), and a living and reactive galaxy-wide economic model. The result was a remarkable feat considering the 32Kb memory limitations of the BBC Micro. The game received almost universal critical praise as well as considerable commercial success and, in subsequent years, the title was ported to 20 different platforms.

An aborted attempt at a sequel was started in 1985 but was shelved to allow Ian Bell and David Braben to focus on other matters, which in Braben's case meant the development of other (non-*Elite*) titles. A sequel, developed by David Braben (but not Ian Bell who had signed over the sequel rights to David Braben several years earlier) was released nine years after the original *Elite*, following over five years of development and featured much improved graphics, the ability to visit planet surfaces and more accurate space flight physics. This too met with commercial success but critical praise was less universal.

David Braben almost immediately started work on a new *Elite* title, incorporating Frontier Developments in 1994 to handle the development. However, under pressure from the financially struggling publisher, Gametek, Frontier's *First Encounters* was released before adequate testing had been completed and still had unresolved bugs. The game received a poor critical reception as a result and it flopped commercially despite further graphical and gameplay improvements over the previous *Elite* incarnation.

Frontier Developments explored the potential of an Elite MMOG in 2000 but the project failed to get off the ground. David Braben revealed his intention to start work on two *Elite* titles in an interview in 2006 (a single-player *Elite* and the MMOG version) although it is thought that no work would start until the release of Frontier Developments' current major project, *The Outsider*, is finished (expected in late 2009).

COMPANY INCEPTION AND GROWTH

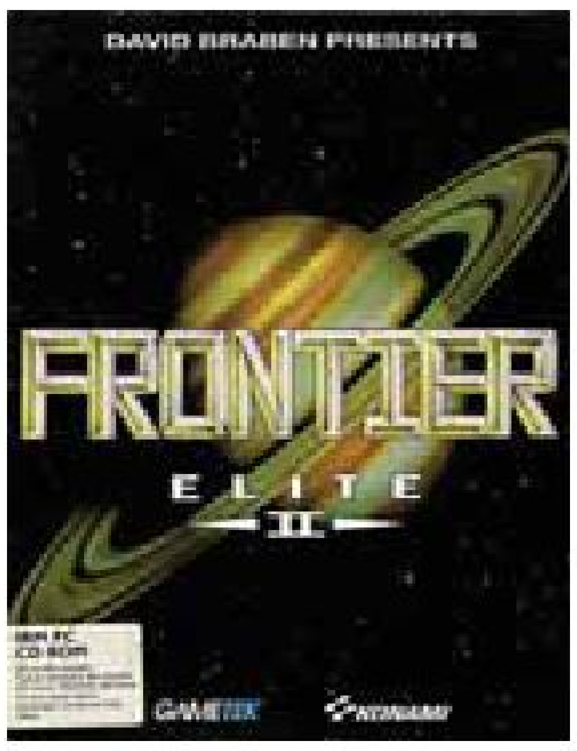
Frontier Developments Ltd was incorporated in 1994, ten years after the first *Elite* game was published, but it had existed informally before this point and had produced both *Elite Plus* and *Frontier Elite: 2*. The original *Elite* was jointly developed and owned by David Braben and Ian Bell. As was common for the time, they had personally entered into a contract with Acornsoft, J's publishers.

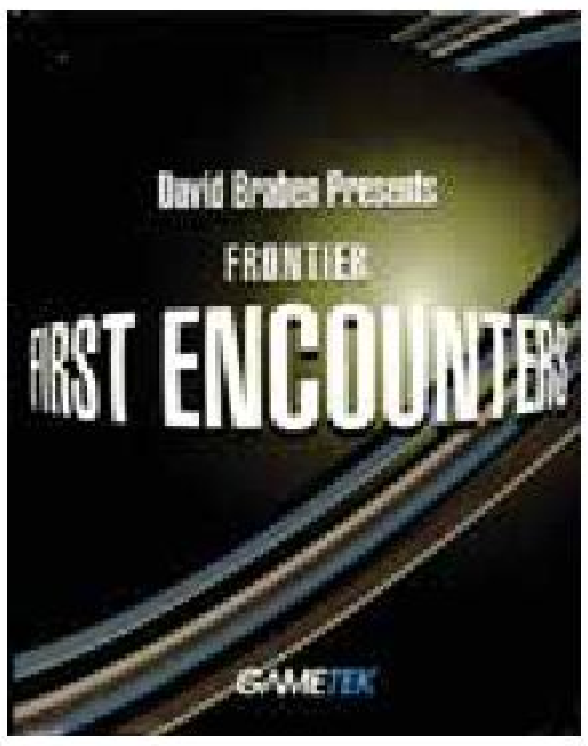
Recognising its quality and the potential for improving hardware sales, Acornsoft took a major risk investing in a high profile launch campaign and using comparatively extravagant (and expensive) packaging for the game.

The BBC version went on to achieve sales of 150,000 (representing a near 1:1 tie ratio of software versus hardware sales at the time) and this led to intense competition for the publishing rights to the title on other platforms. This was eventually won by BT Telecomsoft's Firebird publishing label following one of the first games IPR auctions (handled by a games agent, also something of a novelty at the time).

The title went on to sell a reported total of over a million units. Following the aborted attempt at a sequel, Braben proceeded onto other games development projects, writing *Zarch* and *Virus*. He returned to *Elite* after securing from his former partner the exclusive sequel rights to *Elite* and the right to re-use material created for the original game in return for a ten per cent royalty (of net receipts to David Braben) for the first sequel. The sequel, *Frontier Elite: 2*, was eventually published by UK-based Gametek after the original publisher, Konami, had decided to withdraw from the PC publishing market and had subsequently sold on the *Frontier Elite: 2* rights. It became Europe's best selling computer game of 1993 notching up some 500,000 sales.

ACORNSOFT
ELITE





Buoyed by its commercial success, Gametek and Braben agreed to produce a further *Elite* title, *Frontier First Encounters*. David Braben established Frontier Developers to work on its development. However, its premature release in 1995 undoubtedly damaged both the title's sales and the reputation of the *Elite* brand – no other *Elite* title has been produced since. Its botched release also lead to a protracted legal battle between Gametek and David Braben with whom the publishing contract had been signed. This litigation was eventually resolved in David Braben's favour in 1999, a year after Gametek went into liquidation.

Frontier has gone on to become one of the UK's largest studios, working on both original IP and third party licence development for major publishers.

> **"Elite was a truly seminal property that featured some concepts that have still not been emulated to this day..."**

ANALYSIS

Elite was a truly seminal games property that featured both technology and gameplay concepts that were not just years ahead of its time but in some cases have still not been emulated to this day. Whilst it did not mark the start of the space-trading genre it certainly popularised it far beyond any of the preceding space trading games, largely because earlier titles were text-only. It also went a long way towards introducing the concept of open-ended 'sand-box' gameplay, also a seminal development which was to be imitated widely in later years by games such as the *Grand Theft Auto* series and even massively multiplayer online games such as *World of Warcraft*.

A number of titles based on space flight and trading have been released since the last *Elite*-based title in 1995, most noteworthy of which were Electronic Arts' *Freelancer* and CCP's MMOG *Eve Online* (which was launched in 2003, has some 230,000 subscribers and is still growing).

Elite is also notable for being a games IP over which several bitter and unnecessarily public legal battles were fought.

It appears that many of the legal problems that existed between David Braben and Ian Bell arose because of the continued failure to identify clear IPR ownership of the original title. The agreement between Acornsoft and the two *Elite* co-authors as individuals was not uncommon at a time when most games were developed by sole programmers or very small teams who mostly comprised people in their teens or early 20s.

It is still not entirely clear where the *Elite* IPR (as distinct from the original title copyright, which is jointly owned by David Braben and Ian Bell, and the sequel rights, which were conferred to David Braben via a legally-binding contract with Ian Bell) lies.

David Braben's desire to avoid using the *Elite* name in sequels (he yielded to publisher pressure for the first sequel, but kept the name from the third release) could be interpreted to reflect the less than clear ownership of the *Elite* brand. As it stands, David Braben appears to retain the right to create further *Elite* games and a few years ago he even announced his intention to work on two new *Elite* games. More recent interviews, however, suggest these plans have once again become somewhat uncertain.

The value of the *Elite* IPR in today's market is difficult to ascertain as it has been well over a decade since the last release. However, the popularity of *Elite* 's core gameplay concepts in many of today's best-selling offline and online titles and the failure, in critics' eyes, of the market to produce a comparable *Elite*-style game that lives up to the original release would suggest that it still has considerable potential.

CONCLUSIONS

- Its game universe was unprecedented in scale
- The game was open-ended, with 'sand-box' gameplay featuring role-playing elements
- *Elite* was the first implementation of 3D graphics on a home computer
- The game secured the strong backing of publisher Acornsoft (whose computer, the BBC Micro, was the first platform *Elite* was created for) which included a high-publicity release and premium packaging
- (In the sequels) *Elite* was the first space-flight game to feature fully explorable planet surfaces, an almost unique achievement even to this day.

Games Investor Consulting is a specialist games industry consultancy founded in 2003 to provide independent games research and corporate finance consulting to the games industry and financial community. Headed by Rick Gibson and Nick Gibson, GIC is one of the industry's most trusted sources for market intelligence, has generated a number of industry-standard reports, and has consulted on games strategy and research for numerous games and media companies as well as trade and governmental bodies.

THE DEALS

CRYPRUS
Cypriot publisher Troxit and its development subsidiary Panzar Studio have licensed CryTek's CryEngine 2. The engine will be used on *Forged by Chaos*, a new online fantasy game with RPG elements, and was picked for its DirectX 10 capabilities and its showcase in *Crysis*.
www.panzar.com

TAKE-2 OR 3 OR 4
Following on from the success of Wii physics-based minigame collection *Carnival Games*, 2K Games has taken out a multi-title Havok licence for several upcoming Wii titles. *Carnival Games* has sold over 1.5 million copies to date, and its sequel, *Carnival Games: Mini-Golf*, will be the first title to come from the deal.
www.havok.com

CAPCOM'S EPIC
Capcom has licensed Epic's Unreal Engine 3 for a product being developed in the West. Although it has spent a considerable amount of money building its cross-platform MT Framework, which powers titles like *Lost Planet* and *Devil May Cry 4*, it has specifically licensed UE3 for titles developed outside of Japan – first for a game in development in the US, and now for a title being made in Europe.
www.capcom.com

MMO-FX
The Brighton-based European development arm of NCsoft has picked Allegorithmic's ProFX procedural texturing technology for forthcoming PC and PS3 MMO games. By choosing to utilise procedural textures, NCsoft will be able to significantly reduce the size of the client and of updates.
www.ncsoft.com

BUSINESS LIZARDS
Young upstart studio Blazing Lizard has entrusted its business management responsibilities to Flashman Studios. The studio will use Flashman's expertise in biz dev, PR and finance to help build their business.
www.flashmanstudios.com

MOVEMENT THEORY
Cambridge-based Ninja Theory has licensed NaturalMotion's Morpheme animation engine for a future undisclosed title.
www.ninjatheory.com

DEVELOPER CHART

(APRIL 27th – MAY 24th)

1

↑

LAST MONTH **121**

ROCKSTAR NORTH

BEST SELLING GAME: 🇬🇧
GRAND THEFT AUTO IV

'Quelle surprise!', we'd say, if we were French and surprised. But we're neither, because we were born in England and it's not really that much of a surprise. We've got to wonder: given what it off-loaded in that first month, how long can North keep it up? (Brazen innuendo worthy of the game, there)

PS3, XB360

2

↓

LAST MONTH **1**

NINTENDO

BEST SELLING GAME: 🇯🇵
WII FIT

Wii Fit got into a bit of trouble this month, as child psychologists warned that telling young girls they're overweight might lead to behavioural problems. Not strong enough, say we: until it tells them that no-one cares about their feelings and that Zac Efron isn't going to marry them, there's work to be done.

Wii

3

↓

LAST MONTH **2**

SEGA

BEST SELLING GAME: 🇯🇵
MARIO & SONIC
AT THE OLYMPIC GAMES

Sega is once again running wild in the top five, thanks to *Mario & Sonic* proving that there's still life in this all-star selection of old dogs yet. We did the Princess Peach joke last month, didn't we? Imagine we did a really funny Miles 'Two Tails' Prescott joke.

Wii, DS

4

→ ←

LAST MONTH **4**

KONAMI

BEST SELLING GAME: 🇯🇵
PRO EVOLUTION SOCCER 2008

It's a simple chemical equation: *Pro Evolution Soccer* times the Wii equals rocket fuel powerful enough to propel Konami into the top five for months to come. Expect a certain Old Snake to help them sneak even higher up the chart next month – maybe even to first place.

PS2, PS3, XB360, DS, PC, Wii

5

↑

LAST MONTH **7**

INFINITY WARD

BEST SELLING GAME: 🇺🇸
CALL OF DUTY 4: MODERN WARFARE

This month saw Treyarch lift the lid on *Call of Duty 5* – but will they manage to achieve the same success that Infinity Ward has basked in for so long, or will a boring World War II setting limit potential? Any war before OctoCamo and awkward-footed little Metal Gear Mk. IIs wasn't a war worth fighting, frankly.

XB360, PS3, PC

OUR MONTHLY RANKING OF THE WORLD'S STUDIOS BASED ON UK GAMES SALES

CHART KEY

NEW	NEW ENTRY	⬆	UP
▨	INDEPENDENT	⬇	DOWN
		➡⬅	NO MOVE

6	⬇	LAST MONTH 3	**UBISOFT (MONTREAL)**	TOM CLANCY'S RAINBOW SIX: VEGAS 2	XB360, PS3, PC	🇨🇦
7	⬇	LAST MONTH 6	**EA CANADA**	FIFA 08	PS2, PS3, PSP, XB360, Wii, PC	🇨🇦
▨ 8	⬆	LAST MONTH 24	**A2M**	IRON MAN: THE OFFICIAL VIDEOGAME	PS2, PSP, Wii, PC, DS	🇨🇦
9	⬆	LAST MONTH 10	**MAXIS**	THE SIMS 2: KITCHEN & BATH DESIGN STUFF	PC	🇺🇸
10	⬇	LAST MONTH 5	**POLYPHONY DIGITAL**	GRAN TURISMO 5: PROLOGUE	XB360, PS3	🇯🇵
11	⬆	LAST MONTH 107	**HARMONIX**	ROCK BAND	XB360	🇺🇸
▨ 12	NEW	LAST MONTH -	**FREE RADICAL DESIGN**	HAZE	PS3	🇬🇧
▨ 13	NEW	LAST MONTH -	**FUNCOM**	AGE OF CONAN: HYBORIAN ADVENTURES	PC	🇳🇴
14	NEW	LAST MONTH -	**SECRET LEVEL**	IRON MAN: THE OFFICIAL VIDEOGAME	PS3, XB360	🇺🇸
15	⬇	LAST MONTH 13	**NEVERSOFT**	GUITAR HERO III: LEGENDS OF ROCK	XB360, PS3, Wii	🇺🇸
16	⬆	LAST MONTH 18	**UBISOFT (FRANCE)**	RAYMAN RAVING RABBIDS 2	Wii, DS	🇫🇷
17	➡⬅	LAST MONTH 17	**SONIC TEAM**	SONIC AND THE SECRET RINGS	Wii	🇯🇵
18	⬆	LAST MONTH 26	**EA LA**	BOOM BLOX	Wii	🇺🇸
19	⬇	LAST MONTH 14	**MIDWAY**	GAME PARTY	Wii	🇺🇸
20	⬇	LAST MONTH 16	**NAMCO**	SIGHT TRAINING	DS	🇯🇵

Chart Comment

It'll come as a shock to no-one: Rockstar North has decimated the competition, climbing directly to the number one spot. Of course, Nintendo still manages to put up quite a fight, sulking and licking its wounds in second place despite extremely brisk sales of *Wii Fit*. Of course, there's been a much-publicised stock shortage, but it's unlikely that even limitless units would have helped yoga and aerobics more appealing than the intoxicating cocktail of sex, drugs and hit'n'runs that *GTA* so deftly provides.

The real mover this month is Harmonix, *Rock Band* kick(pedal)ing the studio 96 places up to number 11. Of course, having an RRP of £180 – comfortably four times the price of most – would have certainly helped.

> **"Given Haze's critical rejection, we don't expect any change..."**

Three new studios manage to make an entry this month too, first of which is Free Radical shooting into 12th place despite only a short time on the shelves during the survey period. Normally we'd predict a rise next month once the title's had more time on store shelves, but given *Haze*'s almost uniform critical rejection we wouldn't bet our mothers on any dramatic change.

Age of Conan's successful launch brutally smashes aside the competition to put Norweigan developers Funcom in at 13th place, and the final new entry is Secret Level, the Sega studio entrusted with the next-gen iterations of the *Iron Man* franchise.

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WOLVERHAMPTON PONDERERS

It may have been in the games education scene since the beginning, but that doesn't mean that the University of Wolverhampton is starting to show its age. **Ed Fear** takes a look at how the University stays contemporary…

Looking for a university course focused acutely on game development? If so, you'd probably be better off not looking at University of Wolverhampton.

While that may sound like a criticism, it's merely an observation of a carefully considered decision by the faculty to produce students with the highest degree of employability. And unlike so many universities that have simply renamed an old computer science course and thrown in one or two graphics modules, Wolverhampton's main games related course – the Computer Science (Games) BSc – wears its brackets on its sleeves.

"What we do is computer science with the flavour of games – that way, those that want to specialise in games can do and can get jobs in the industry afterwards, and other students aren't tied down," says Stuart Slater, principal lecturer at the university's School of Computing and ICT.

"If a student wanted to work in a different computing industry but had a computer games degree they wouldn't have a chance. So, we focus on making our students employable beyond games. You can't guarantee turning out 120 graduates and giving them all jobs. Some of them that have been on placement don't actually want jobs in the industry when they've finished."

> ***"Some students that have been on placement don't want jobs when they've finished…"***

As such, its course offers a general computer science course in the first year, and then offers modules in the second and third years to teach subjects such as Windows programming, physics, AI and game programming in C with a wrapped version of DirectX developed in conjunction with Microsoft. Towards the end of the course comes a team module where students can pick their game engine of choice and make a game based on it, with previous years seeing projects built with Unreal Engine, all three of the *Quake* engines, *Half-Life 2* and even Torque.

The curriculum has come out of a natural evolution over the past six years through consultation with studios including Data Design, Codemasters, Bizarre Creations, Epic Games, Westwood and GarageGames – although Slater frankly admits that it initially wasn't quite so well structured.

"What we found when we first ran this course is that the students weren't that employable. So we spoke to the places where they'd been interviewed and they said that their maths wasn't good enough – as a result, we added maths to our degree and now we have students making Wii games for one of the biggest Wii developers."

In addition to its backbone Computer Science (Games) course, two years ago saw the introduction of a full degree in Computer Games Design, a games-focus visual arts degree. Up until this year, the university also offered a MSc in the

UNIVERSITY OF
WOLVERHAMPTON

Left: UoW's computing department. Below: Principal lecturer Stuart Slater

games field, but a shift in demand has seen the course refocus on the rapidly-growing simulations field – a focus that the university is uniquely qualified to provide, given that it has been running the CGames conference, for the past eight years.

"Some of our researchers are in games and simulations, and we're seeing a big growth in simulation," explains Slater. "At masters level, we're finding that students aren't that interested in games, they're more interested in the application of games to training, education – so we've moved more into using game engines for training at the MSc level."

Given the vast number of other games development courses out there, how does Wolverhampton distinguish itself to compete? "I think the quality [of these degrees] varies – what students should look at is,'Who's teaching these courses? What have the students been doing as placements or projects?' We've had students in the third year actually writing papers that have been published at international conferences, some of them co-authoring with lecturers.

"If you're interested in computer science and games, we've got a good track record in this area, what with the CGames conference and our research work. All of the staff that teach here are researchers in computer games – they are people who've got expertise in their areas. We've got students writing Wii games on their placements. Our students have represented the West Midlands in the Dare to be Digital competition in the past, and this year one of the two teams representing the region is from our university. There's a lot going on – it's a great course."

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BETA

DEVELOPMENT FEATURES, INTERVIEWS, ESSAYS & MORE

> “Iteration and managing risk are the keys to innovation...”
>
> Gabe Newell, Valve, p50

Brighton’s brightest studios

p36

Develop Conference guide

p43

DEVELOP
in brighton

Shuhei Yoshida: The first interview

p54

Rebel Alliance

Rebellion chiefs Chris and Jason Kingsley on the expansion of their fleet, p30

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Rebellion chiefs Chris Kingsley (left) and Jason Kingsley (right)

Rebel Forces

Now in its 16th year of business, Rebellion is one of the longest serving and biggest independent developers not just in the UK but also Europe. **Michael French** caught up with founder brothers Jason and Chris Kingsley to pick their brains in the studio's success and plans for the future…

Rebellion is one of the biggest independents in Europe. What's the secret to your success?
Jason: We take a portfolio approach – we like to have a balance of different games, and a number of them in the works at once. What that has meant is that our expansion isn't expansion for expansion's sake – it's to satisfy the demands of the games we are working on. And that's something needed when those projects are based on the biggest entertainment brands – how many is it, now?
Chris: Four: *Star Wars*, *Potter*, *The Simpsons* and *Bond*.
Jason: And the people that own them are some of the biggest companies in the world – and we do repeat business. I think one of the great tests of success for a company isn't getting someone's business once – it's getting their attention so they come back.
Chris: What's great about working with the bigger publishers is they can provide much better support when you need it. That support can make a difference.
Jason: Having said that, we do work with some tiny publishers – when it came to *Freerunning* with Reef we did a lot of work that publishers tend to look after, which was a learning experience. But not that that was a problem – when you've worked on a game for two years, you want it to have really good boxart. It's not a hardship. So we've tried to, overall, have a mix between original properties and the classic independent game, which is a licensed product for a big third-party publisher.

Of course that has caused some problems – we do really well out of that, but review scores don't tend to correlate with it. I guess we have to endure the arrows that are slung from our fortune. But we focus on our target audience – and are always trying to stick to our philosophy of having a good, profitable business that allows for our staff to be creative.
Chris: Business and creativity aren't comfortable bedfellows, so it's always interesting balancing the two and trying not to compromise either.

But when you're making a game from a specific licence can you really be creative?
Jason: One of the things we insist on is not to do simple conversions – we're happy to take a property and turn it into a game, but the key is to add ideas to it and be inspired by it. We've turned down a fair few offers because we felt there wasn't much flexibility in what we wanted to do with the content.
Chris: The best games you get out are the ones people enjoy working on – the love goes back into it. It's easier to put in a few extra ounces of passion than if you're doing something because it's 'just a job'.

> ***"I think one of the great tests of success for a company isn't getting someone's business once – it's getting their attention so they come back…"***
> ***Jason Kingsley***

Jason: And there's balancing people's lifestyles, too. It's important to pick projects that keep the staff interested and productive. We obviously have crunch modes – every creative project has them – but we don't plan them in. We prefer it to be a few days, or a weekend, or at most a week – if people are enthusiastic that becomes a positive thing towards the final part of a project. But at the same time people need to be chucked out of here, and told to go home and recharge their creative energy. One of the great things about Rebellion from my point of view, which I hope helps the staff, is that our range of games mean we aren't typecast. Because we have a diverse range of games, there's no worrying about 'how to innovate in genre X'. I often wonder how some of the driving studios' staff cope with that – the managers of them must instil a phenomenal amount of passion in their staff to keep enthusiasm high.
Chris: Of course, we were known as specialists on PSP, but even then we had to start turning work away because as the generation has gone on we're looking at bigger projects to handle. And the genres you pick also determine where you get in on the platform cycle – so kids games developers do better at the end of a console life cycle.

Market changes like that must have a big impact on a work for hire-style outfit like Rebellion. Surely you're at the whim of publishers and how those very console cycles impact their business?
Jason: Not so much, but you do see them struggling with next-gen first hand. When this generation first came along, there was a reluctance amongst publishers to commit resources and investment in games that were external products, and they would invest in their internal technology.
Chris: The problem that creates for them is that often that technology isn't up to scratch – they just haven't had enough time to develop it – and that works against them. So what we've seen is how they change strategy. There's been a bit of a gap in the next-gen release schedules, not as many games for those formats have appeared as you might have expected. Of course, now publishers see it happening first hand, and they're going back on their fears over why they should bother paying for a third-party independent to develop its own technology. Publishers have let go of their worries about what they are spending on – and see the bigger picture of paying for a game, rather than its technology.

Rebellion recently opened new offices in Oxford, housing all of that studio's staff in an impressive open plan base on the edge of the city

Rebellion has its own in-house engine, and you've been vocal supporters of producing that tech internally. What advantage does that provide you and how has that helped your growth?
Chris: There are good reasons for and against licensing middleware or building technology, but your decision will always be based on where your company is in terms of life cycle, size, etc. For us, our engine Asura has been designed purely so we never have to say to a publisher 'Well, we wanted to add this feature in, but we can't in the amount of time given because it's someone else's engine'. I have heard of a lot of projects which have problems or bugs due to third-party technology.

You have an in-house audio studio too – is that there for the same reason, so you can own the process?
Jason: Our approach isn't the only approach, and I don't think you have to have everything in-house. If you're working on just one or two titles then it makes sense to outsource your audio, or your motion capture – which we do – because it's right to have out-of-house experts looking after certain elements like sound and mocap. But there's an increasingly large amount of sound needed for every game – and one of the things we've found is that we create good quality placeholder voice work, or use our studio to try lots of different lines when it comes to audio. So it goes back to the way we try and keep things creative. Plus, for audio specifically, it's one of those elements we feel that requires a lot of effort – it sounds strange to say it, but good audio makes the graphics better. Because if you watch most games with the sound off the complementary effects are gone. Same goes for many films.
Chris: And for a lot of developers sound gets put in last minute or at the end as an afterthought, but we think it has to be an integral part of the process from day one. And on the outsourcing point we do a lot of in-sourcing amongst our teams, sharing work between our studios in Derby or Liverpool.
Jason: I think the key is that when you get to a certain larger size as a developer there are things you can outsource but a lot of things which should remain in-house. A lot of the major competencies you have to do in-house as your partners are paying for it. And we'll never be set up like the film industry where our principal work takes place across 11 weeks and then other teams can take over. The games business model when it comes to production isn't linear like that.
Chris: I also think that industry is waking up to this more 'totally owned' approach – just look at Pixar. They do everything in-house.

> ***"We're quite different from other businesses in games. We haven't grown by pumping in money from outside to artificially grow…"***
> ***Chris Kingsley***

Rebellion is also one of the few multi-site studio teams in the UK – Kuju has moved away from that model, but you guys insist on shared tech across all bases. That must be tough to get right – is it worth it?
Chris: I always see it as an over-duplication of work. And in terms of how we've cracked some issues which companies like EA didn't – like shared technology – I think you can get it right at a sweet spot for the company size. What we have done probably isn't possible with a massive operation, or a smaller one.
Jason: Plus our technology investment was deliberate to make sure we were prepared for PS3 and beyond – the thinking is to take the path of least resistance in the long term. Because taking the path of least resistance in the short term is to buy everything off the shelf, but you will hit a bump further down the road. Buying someone else's technology is just shifting responsibility and risk to someone else or just moving your problems to the end of a project. So I don't think that's a very smart strategy in the long run.
Chris: And investing in an external engine is essentially golden handcuffs – once you've paid for it once, to make a good return on it you have to pay for it again.

You must compete with and pitch against other big work for hire developers, especially those in the US. But now we're hearing that American companies think the UK is too expensive a place to do business – have you encountered that attitude?
Jason: No, the UK is still nowhere near as expensive as it is in California – and although we are not that far behind I would say Britain is the best place to get a game made.
Chris: There's always going to be somewhere cheaper but you get what you pay for.
Jason: Exactly, there are some horror stories other studios will tell you about going to low-cost places to have a game made, so there is a risk/reward situation for publishers when it comes to paying for that. We've been around 16 years, and we've not got a reputation to maintain, which I think is one of the things that helps us attract work. Same goes for other UK studios.

With all those assets you'd think that Rebellion would be a ripe target for acquisition…
Jason: Further acquisitions, like the ones we made to get our Derby and Liverpool studios, are definitely possible – as is the possibility of being acquired ourselves. We've never said never to it but it's not something on our roadmap, we're not planning to cash out because I like the lifestyle of running and owning a company. I think we'd have a lot to offer another company if they wanted to acquire us, but it's not a goal of ours – we've had venture capitalists offer to invest in us, but we don't really need it because all our growth has been organic. We've never had investors like that.
Chris: That's one of the key Rebellion strengths – we're quite different from other businesses in games, especially our origins. And we haven't grown by pumping in money from outside to artificially grow. pretty much all of our size has come from demand from the market and the people we work with and games themselves.
Jason: And along the way we've surrounded ourselves with talented individuals.
www.rebellion.co.uk

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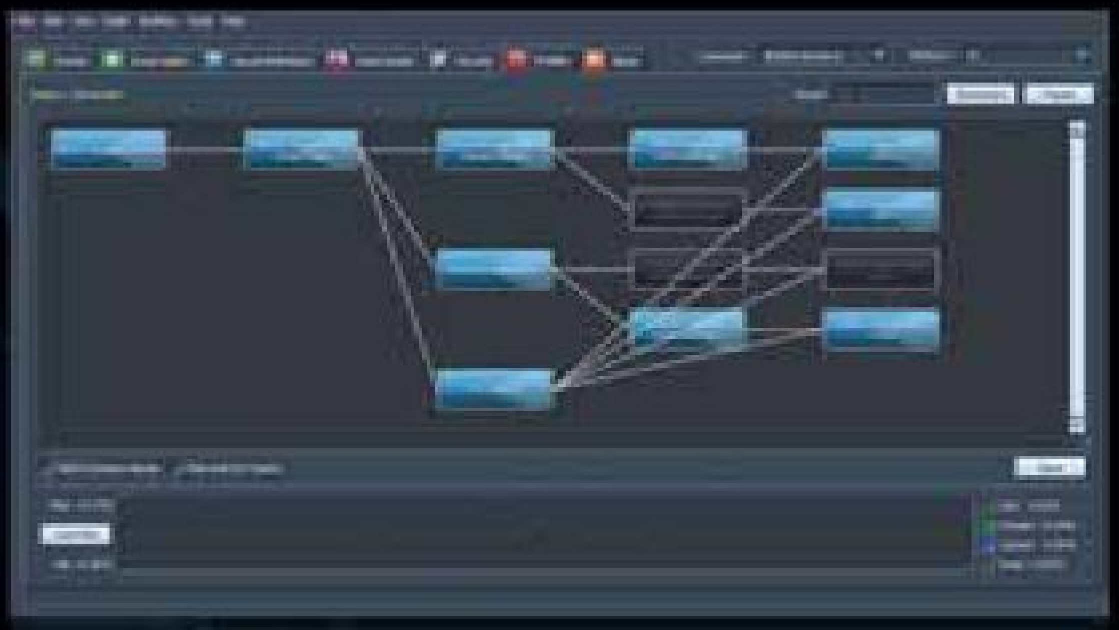

DEVELOP AWARD 2008 FINALISTS

CREATIVITY

Best New IP
LostWinds (Frontier Developments)
Heavenly Sword (Ninja Theory)
Crysis (Crytek)
World in Conflict (Massive)
Viking: Battle for Asgard (Creative Assembly)
Overlord (Triumph)

Best Use of a Licence
Ferrari Challenge (Eutechnyx)
The Darkness (Starbreeze)
Sega Superstar Tennis (Sumo Digital)
Enemy Territory: Quake Wars (Splash Damage)
Lego Indiana Jones (Travellers' Tales)
Metal Gear Solid Mobile (Ideaworks3D)

Visual Arts
Rockstar North (*Grand Theft Auto IV*)
Crytek (*Crysis*)
London Studio (*SingStar* PS3 UI)
Frontier Developments (*LostWinds*)
Criterion Games (*Burnout Paradise*)
Ninja Theory/SCEE Cambridge (*Heavenly Sword*)

Audio Accomplishment
London Studio (*SingStar* PS3)
Rockstar North (*Grand Theft Auto IV*)
Ninja Theory/SCEE Cambridge (*Heavenly Sword*)
Sumo Digital (*Sega Superstars Tennis*)
Codemasters Studios (*Race Driver GRID*)
Criterion Games (*Burnout Paradise*)

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Technical Innovation
Rockstar North/NaturalMotion/Image Metrics (*Grand Theft Auto IV*)
Ninja Theory/SCEE Cambridge (*Heavenly Sword*)
Ideaworks3D (Airplay)
SCEE R&D Team (PhyreEngine)
Geomerics (Enlighten)

Creative Outsourcing
Axis Animation
Side UK
Richard Jacques Studios
Outsource Media UK
The Audio Guys
Nimrod Productions

Services
Testronic Labs
Partnertrans UK
Babel Media
Audiomotion
U-Trax

Recruitment Company
Specialmove
Day One Search
Aardvark Swift
Amiqus
OPM

Games:Edu New Talent Award
Abertay University & Dare to be Digital
Rare
Microsoft
Blitz
University of Derby
Hull University

STUDIOS

Best New UK/European Studio
Finblade
Konami Paris
Oxygen Studios
Rockstar London
Doublesix

Best Mobile Studio
Progressive Media
Ideaworks3D
Digital Chocolate Finland/Sumea
Distinctive Developments

Business Development
Zoë Mode
Rebellion
Realtime Worlds
Team 17
NaturalMotion

Best Independent Developer
Rebellion
Jagex
CCP
Frontier
Splash Damage
Ninja Theory

Best In-house Developer
Rockstar North
Codemasters Studios
Criterion Games
Sports Interactive
London Studio
Bizarre Creations

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LLENCE AWARDS

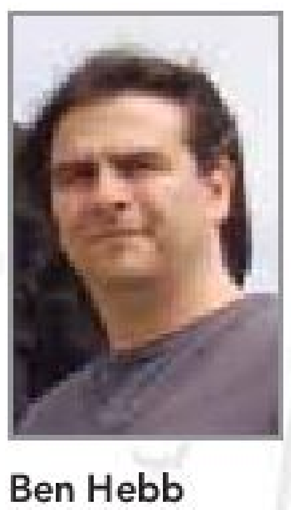
BRIGHTON PEERS

With Brighton booming for games development, **Michael French** gathered key staff from the leading games companies in the area to find out why the South Coast city has become one of the fastest growing hubs for UK talent – and how it could develop in future…

Andrew Eades
The co-founder of Relentless has worked in the southmost UK games hub (Brighton) and its northmost (Dundee)

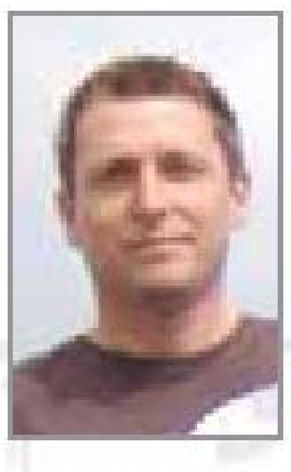
David Amor
Relentless' creative director and co-founder – and the only person on our panel who actually grew up in Brighton

Algy Williams
Non-executive director of Babel Media, and the first to set up a games company in Brighton, in 1999

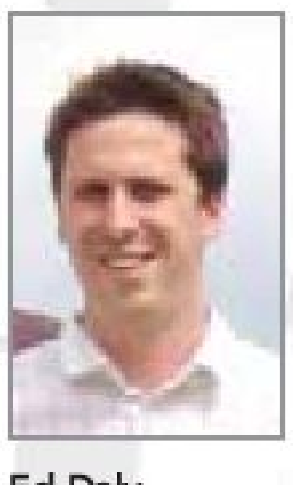


Ben Hebb
Zoe Mode's art director says his earliest memory of Brighton was "getting really drunk here, and just loving the place"

Jay Scott
The new head of development at NCsoft Europe. And a Canadian



Tony Beckwith
Founded Climax Racing months after Babel opened. His studio has since been bought by Disney



Ed Daly
Another member of the class of '99, the head of Zoe Mode started in Brighton by founding Wide Games

Brighton has been a place for games development for some time. But who was here first? And why Brighton?

Algy Williams: I was based down here in 1993, producing a game for Epic. I started here because Epic was here. But once my gig there finished I started Babel in 1999.

Tony Beckwith: When in '99 was that?

Williams: January '99.

Beckwith: Ah. We [Climax Racing] got here in November '99

Williams: I came for the language. It's the second largest concentration of native speakers

in the UK, outside of London. So there was a huge number of people here for testing and localisation we could hire. Plus there's two universities, a language school and various other institutes here. That allowed us to grow really quickly.

Ed Daly: For us [*Wide Games before it was called Kuju Brighton*] it was also '99. It was easy to raise money then, everyone was throwing money at start-ups.

Beckwith: I was based in Croydon. So I was like 'Get me the hell out of here – I want to go to Brighton!' The city was such a natural, obvious fit for the kind of thing we wanted to do.

David Amor: I grew up around here. I just figured it was a nice place to live, and a perfect place to set up a studio. Selfish reasons, really – I just liked it here.

Daly: People are definitely attracted to Brighton for what it is. For many it's a place associated with good times.

Williams: The cost base has grown now, but around 1999 it was considerably cheaper than London, but just an hour away by train. I think that's not necessarily an explanation for why people were here but a good explanation for why it has grown. There is nowhere else with this distance to London which has such a strong linguistic and creative and technical base.

> ***"There is nowhere elese with this distance to London which has such a strong linguistic and creative base…"***
>
> ***Algy Williams, Babel Media***

Ben Hebb: It's also very well known for its liberal, relaxed atmosphere. That gives the place a real creative edge.

Beckwith: When we came here one of the things that stood out for me was that there were a number of comic book artsts already down here, which proves it is quite a creatively different city, and not just in terms of the art companies.

Andrew Eades: But also the music.

Beckwith: Yeah, and lots of web companies, because it was all just before the bubble, and they were here because it was cheaper and the city is full of creative people.

Eades: We actually base a lot of our PR on the fact we are based in Brighton. It's a great thing to promote.

BRIGHTON
ROCK

So it's a destination city. But if the people are so mobile what's to stop them leaving?

Amor: I would speculate that people who come here, especially the slightly older ones, stay here because it has what they need for a family – there are schools if you have kids, and the place has a great atmosphere.

Eades: When I came here six years ago I had been working just outside Brighton. Since then I've grown to love it – it has everything I want and I think I'll be here forever.

Beckwith: It's called 'London by

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Brighton has a rich cultural and entertainment environment, our panelists say

the sea' for a very good reason.

Eades: Exactly. I've worked and lived in Dundee for DMA before, and I didn't dislike it – because I was there for the job and the people I worked with. But here in Brighton you have that *and* you've got the fact that Brighton is a great place to live.

Williams: The city has changed enormously since when I was first here. Back then it was a bit sleazy but that's gone. The city is growing in terms of its culture – with all the festivals – and it continues to grow, and especially in terms of games development obviously, as a place to attract really great people.

Jay Scott: And it's very welcoming to new people. I've travelled around a lot, but I've never been anywhere where you can walk around and hear so many different accents. For NCsoft that's enormously useful because we can tap into a city that boasts people form all over Europe, all over Asia, has people from North America and has a great British contingent too. The cross-culture aspect is great.

Daly: At Zoë Mode we have a number of artists from other European countries in particular and that gives us a real creative, friendly mix in the studio.

Hebb: Also, what that meant was that when we needed to grow and add new people for our work on *SingStar* we were able to tap straight into that music culture here and find people who had very different skills from normal games development that could instantly help our projects. That feeds back into the atmosphere of the studio which positively impacts the kind of games we make. If you bring in people who didn't necessarily intend to go into games development they tend to have different interests than your usual developer, and that means they create a different environment in which to work and that impacts what you do.

Williams: I've got a question for the rest of you. Can we continue to scale at the rate we currently are? Or is there a ceiling to it?

Beckwith: I think the ceiling is a long way away.

Eades: We can continue – there's certainly no lack of CVs coming in.

Beckwith: It's not like we're currently cannibalising the talent base that is here. The biggest limiting factor in Brighton is office space.

Scott: The UK has clearly lost a lot of talent to Canada and places in North America. When I was at EA Canada there was a running joke that you couldn't be a technical director there unless you were British. But I think Brighton offers a great opportunity to lure back people originally from the UK who now work overseas.

Williams: And I guess climate might also play a part in that as well; if you're going to choose between Montreal and Brighton as a place to work, and basing part of your decision on what the place is like to live, well, there's a good chance you'd choose Brighton.

> *"Brighton offers a great opportunity to lure back people originally from the UK who now work overseas…"*
>
> *Jay Scott, NCsoft*

With regards to the talent base in Brighton going forward – how do you all contribute back to help grow it? Who here has relationships with local colleges or universities?

Amor: We have a relationship with Brighton College – we go there to host talks on what we do, and hold presentations on art. We've hired two of their graduates recently.

Daly: We've worked with the University of Brighton on a few things. One of them was a competition they help with students to pitch ideas for new games that we helped with. We've also run a number of internships with people from local colleges and universities.

Hebb: The University of Brighton also run a portfolio clinic, which we have gone along to, and helped with. There's also Lighthouse, which was running some storyboarding courses – it attracted a lot of people interested in games and film, and we went along to talk to those attending about how what they were learning was applicable to games.

Daly: There's also a music college in Worthing and we've helped feed back into their courses.

Williams: We hire a huge number of contingency staff through universities – a lot of those stay on as full-time. So it's a great pipeline of talent for us.

Scott: NCsoft has a relationship with Skillset and we've hired a lot of people through that. We also run some mentoring programmes. But I don't think we're as involved as we should be, but the development aspect at NCsoft Europe is relatively new so we're still finding our way.

How much pressure do you feel to keep those relationships strong – because surely even if Brighton does attract a lot of people, they aren't necessarily right for games?

Hebb: With any graduate, some of them are right for it, some of them just need a bit of instruction or talking to, while the rest sometimes seem like a lost cause – you know that if their courses were just a bit better they could be so much better. Or they would know and understand what they want out of the games industry. That's what tends to provoke me – there's clearly still a long way for us to go and for us to get more involved.

Eades: I've been talking a lot with the University of Brighton in particular – they've only just started teaching the coders what the right language is to use. It's early days, though – and for them I'm hopeful because they have the right ideas. What they are getting right is that it is a very technical course – but of course they are suffering, the way all universities are, of a lower intake of students into those programmes. It's an issue we should all be aware of, because the graduates

Brighton
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BRIGHTON
ROCK

we take on take a while to develop into good employees – but they usually become really, really good employees. Because people aren't taught how to make a PS3 game at university.

Beckwith: I'm amazed at how quickly graduates learn, though. Some of our highest quality talent has come straight from university – and after two years they are invaluable.

Eades: Same for us. Some of our best coders have been found that way.

Beckwith: And we don't, and I don't think studios should, just look on our back doorstep – all of us are competing internationally with other studios, so our dealings with talent are the same. I'd like to think we could attract someone just out of education from almost anywhere in the world to come work with us.

As the industry expands, can you see more companies heading here? Are they welcome?

Eades: I think the hard thing is that, if you're starting a new studio you have to pick your genre well. Back in 1999, for Tony it might have been more obvious or easy to choose racing as a specialism. Now there are lots of opportunities but risk associated with them all.

Beckwith: But for us specialising then was actually a first. If you look at all the other studios that were based around here, Wide Games and Computer Artworks, they were developing any kind of game – but we were insistent on driving games. We turned publishers down when they asked us to make action titles. And that's something not just us, but which Relentless proves – specialisation is key. Same for Zoë Mode. I would say Brighton can help support that. Some start-ups would do better here than in other places because it has that vibrant online community and talent base – Second Life and Club Penguin have UK offices here.

Scott: I think that whenever an area reaches critical mass, which is where Brighton is heading, you will see lots of people split off from big companies and join in with their own studios – we'll see more of that here in Brighton. When you have that many companies together it can't help but spur growth.

Amor: I have a question for the rest of you – do you think that Brighton impacts staff retention? I'd love to think that there were company-specific things that kept our staff at our studio, but our staff retention is amazing, so I would attribute some of that to the fact we're based in Brighton as well.

Daly: We certainly don't have many people leaving – it's people coming in rather than out.

Williams: Our staff, by their very nature, aren't very location-reliant. But the reason they come to Babel, and stick around, isn't just because they like the work environment, but they like living here. I bet the staff retention rate at all our businesses is a hell of a lot better than the one in Guildford.

> *"The studios here can attract someone just out of education from anywhere in the world to come work with us..."*
> *Tony Beckwith, Black Rock*

Is there much staff swapping between the studios?

Daly: I always thought there might be, but it turns out it doesn't happen as much as you'd think.

Beckwith: What helps for the studios in Brighton is that our businesses are all really complimentary. We make racing games, not social games like Zoë Mode or quiz games or MMOs.

Eades: It's inevitable that some people move between studios, but so far the numbers of people that do that is relatively low.

Amor: And I think all of us here are smart enough to know that it's not good for the industry to cannibalise each other's workforce.

Scott: I think games studios as a whole haven't done that well, historically, to give their staff a reason to stick around. But we're beyond that now, and issues like quality of life are now a huge part of the package when it comes to recruiting. That's why being in Brighton helps.

So can Brighton compete shoulder to shoulder with the San Franciscos, Tokyos and Montreals of the world?

Beckwith: I've always loved the San Francisco quote, that Brighton is 'the San Fran of the UK'. I think it's possible to have that status – we certainly have the lifestyle and employment culture to match.

Daly: Internationally Brighton doesn't have the profile those cities do, but in many respects those things are gained over time. Montreal's games industry existed long before Brighton's, for instance. But Brighton is definitely a hot spot within the UK.

Eades: Montreal is on the map because of its games talent – of course it's helped by the subsidies – but I went to their conference a few years ago and was very impressed with the quality of people there. There's nothing stopping Brighton achieving the same status.

Daly: Especially with things like the Develop conference, which is comparable, that adds to the profile of the city.

Eades: Currently the only thing that could really hold us back is office space. That's a Brighton issue – but I'm sure we'll solve it.

Williams: I think, on the office space issue which we've all mentioned, what will happen is that we will in time move out of the centre – it's already happened for us, and I can forsee other people doing the same.

Scott: Speaking as someone from North America, the other advantage Brighton has over competing studios in San Francisco is the problem with visas – it's actually very hard for a UK-born coder to get a job in the US because of the visa issue. With its location in the UK, and the UK being in the EU, Brighton has a huge advantage. There's some great games coming out made by all the studios in this room, too – that will help a great deal.

WANT TO HEAR MORE FROM OUR BRIGHTON PANEL? A LONGER TRANSCRIPT OF THIS ROUNDTABLE CAN BE FOUND AT WWW.DEVELOPMAG.COM

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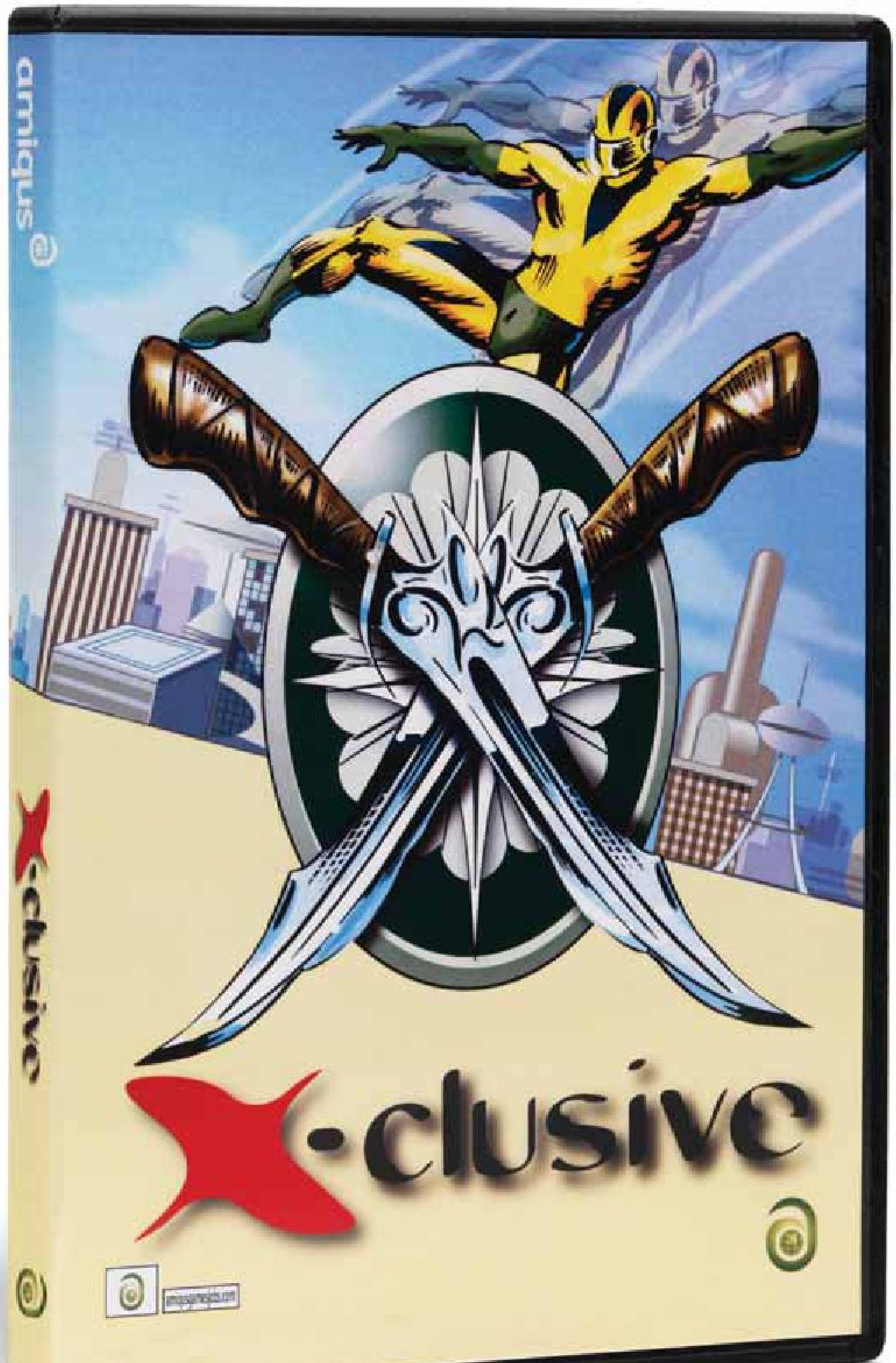

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Like to be beside the seaside?

Then pack up your bucket and spade and head to Brighton this month, for the Develop conference and expo. Across the next four pages, Develop offers you a handy guide to the event…

On July 29th, UK coastal city Brighton will once again welcome over 1,000 developers and games execs to attend the Develop conference and expo.

It's the third outing for the event, which goes from strength to strength each year. The conference is split into three parts: the main two-day conference which runs on July 30th and 31st, the accompaning expo, and then the three one-day conferences that run before them on July 29th for mobile, online and games education. Over the next four pages we've pulled together all the info about them, including timings and speaker details for each session, plus a guide to the expo.

For 2008, the event has been put together around four key themes: Capitalise (exploiting the opportunities open to developers in 2008); Specialise (how studios can stay at the cutting edge); Inspire (best ways to motivate and reward staff); and Enjoy (the networking opportunities at the conference and fun evening events, like the Develop Pub Quiz and Develop Industry Excellcence Awards).

Everything revolves around the Hilton Metropole Hotel, right on the seafront in Brighton and, as we say, kicks off on July 29th. Head to **www.developconference.com** for more details. And see you there.

WHAT: Develop Conference
WHEN: July 29th to 31st
WHERE: Hilton Metropole Hotel, Brighton, UK

KEYNOTES

MAIN KEYNOTE:
BioShock and Awe: Immersing the Gamer in an Alternate World Without Drowning Out the Gameplay
Speakers: 2K Boston's Ken Levine, (studio founder and creative director), Nate Wells (lead technical artist), Chris Kline (technical sirector and lead programmer) and Bill Gardner (level designer)

TRACK KEYNOTES:
BUSINESS: The Broadening Imperative (*Shannon Loftis, director of European production, Microsoft*)
DESIGN: Why the Future is Brighter than Ever (*David Braben, Frontier*)
PRODUCTION: Working Hard and Having Fun: How Naughty Dog Made Uncharted: Drakes Fortune (*Richard Lemarchand, Naughty Dog*)
CODING: Halo AI Retrospective: Eight Years of Work on 30 Seconds of Fun (*Damian Isla, Bungie Software*)
ART: Framestore and The Golden Compass: The Tools and Techniques of Visual Effects (*Andy Lomas, Framestore*)

Tuesday 29th July: One-day conferences

Develop Online

09.30 - 10.15	KEYNOTE: TBC
10:15 - 10.30	Break
10.30 - 11.00	Session Name TBC *Piers Harding-Rolls, Screen Digest*
11.00 - 11.45	I'd Like to Teach the World to Code: Scripting Your Second Life *Jim Purbrick, Linden Lab*
11.45 - 12.30	Creating a Successful MMOG: Challenges, Insights and Production Techniques *Henrique Olifiers, Jagex*
12.30 - 13.30	Lunch
13:30 - 14:15	Working on Persistent and Unique Game Worlds: Challenges and Solutions Moussa Khan, CCP
14:15 - 14:30	Break
14:30 - 14:45	PlayStation Home Session *Liam Wickham & Darren Cairns*
14:45 - 15:30	Virtually Legal: Liability Issues in Online Gaming *Robert Bond, Speechly Bircham*
15:30 - 15:45	Break
15:45 - 16:30	Real World Threats: The Dangers of Illegal Real World Trading in the MMO Space and Possible Ways to Tackle Them *Imre Jele, Blitz Games*
16.30 - 16.45	Break
16:45 - 17:30	Playing Together: What Games Can Learn from Social Software *Tom Armitage*
17:30 - 18:00	Money! How to Monetize Your MMO or Virtual World Randall Price, SVP, Global Business & Legal Affairs, ArenaNet; *Veronique Lallier, Marketing Director, NCsoft Europe*

Develop Mobile

09.30 - 10.15	KEYNOTE: The Future of Mobile Gaming: A New Reality *Aki Jarvilehto, Nokia*	
10:15 - 10.30	Break	
10.30 - 11.15	Gazing into the Crystal Ball: Divining the Future for Mobile Games *Moderator: Kristian Segerstråle, Playfish; Paul Marshall, PlayerX; Alex Cacia, Ideaworks3D; Patrick Mork, Glu*	
11.15 - 11.30	Break	
11.30 - 12.15	Copy right: If You're Short of Ideas for Your Next Mobile Game, Nick These *Stuart Dredge, Pocket Gamer*	
12.15 - 13.30	Lunch	
13:30 - 14:15	State of the Mobile Gaming Market *Alistair Hill, M:Metrics*	From Max to Mobile: Working with 3ds Max to Create Great 3D Mobile Game Graphics *Nigel Little & Tim Doidge, Autodesk*
14:15 - 14:45	Break	
14:45 - 15:30	Transforming the Market: Lessons Learned from Marketing Transformers and Other Big Branded Titles *Patrick Mork, Glu*	Score! The Making of UEFA EURO 2008 and EA Sports FIFA 08 on Mobile *Adrian Blunt, Electronic Arts*
15:30 - 15:45	Break	
15:30 - 15:45	Global Opportunities for Native Mobile Games *Tim Closs, CTO Ideaworks3D*	Constrained Creativity: Using the Limitations to Your Advantage *Jeferson Valadares, Electronic Arts*
16:30 - 16:45	Break	
16:45 - 17:30	Never Mind the Buzzwords: New Solutions to Mobile Gaming's Challenges *Tim Harrison, Electronic Arts; Chris White, Glu; John Chasey, Finblade, Monty Munford, PlayerX*	

Games:Edu

09:30 - 10:00 Introduction: Toby Barnes, Pixel-Lab
10:00 - 11:00 Keynote: Bedroom Programming
Mark Morris, Introversion
11:00 - 11:30 Break
11:30 - 12:30 Working With Lecturers
Jolyon Webb, Blitz; Heather Williams, De Montfort University
12:30 - 13:00 The 10 Commandments of Game Degrees, *Ernest W. Adams*
13:00 - 14:00 Lunch
14:00- 15:00 Community Gaming with XNA - The Arthouse of Games
Nick Burton, Rare, Albert Ho, Microsoft Game Studios
15:00 - 15:05 Skillset Sessions
15:05 - 15:30 Industry Engagement and Research, *Joseph Cavalla, University of Portsmouth*
15:30 - 16:00 Panel: University and Professional Courses – A match made in hell?
Nic Oliver, Qantm; Lee Danskin, Escape Studios; Stephen Rea, Academy Class
16:00 - 16:30 Break
16:30 - 17.15 Keynote: Games Need You
Jonathan Blow

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Wednesday July 30th: Conference

09.00 - 09.30	Registration					
09.30 - 10.30	Keynote BioShock and Awe: Immersing the Gamer in an Alternate World Without Drowning Out the Gameplay *Ken Levine, Bill Gardner, Noah Wells, Chris Kline; 2K Boston*					
10.30 - 11.00	Break					
11.00 - 12.00	Design Strategically: Is Your Game Missing the Market? *Phil Mocham, Digital Governance*	What is PLAY? *Jun Fujiki, Japan Society for Promotion of Science; Tatsuya Suzuki, SCEJ*	Engineering Mood and Atmosphere with Light *Chris Doran & Ivan Pedersen, Geomerics*	KEYNOTE: The Broadening Imperative *Shannon Loftis, Microsoft Game Studios*	TBC	Creatives and How to Get the Best Out of Them *Paul Barnett, EA*
12.00 - 13.30	Lunch					
13.30 - 14.30	KEYNOTE: Why the Future is Brighter than Ever *David Braben, Frontier*	Social Games: Another Fad or the Next Big Thing in Video Games? *Kristian Segerstrale, Playfish*	Heavenly Sword Cinematics: Real Emotion in Real-Time *Stuart Adcock, Ninja Theory*	A Complete Xbox 360 GPU Particle System: Technology & Pipeline *Simon Scarle & Sebastian Sylvan, Rare*	TBC	Agile Project Management: Experiences Shared from Iceland and 16 Other Countries *Patric Palm, Hansoft; Noah Ward, CCP*
14.30 - 15.00	Break					
15.00 - 16.00	Striking Chords *Ciarian Walsh, Zoe Mode*	Media Molecule: The Experiment Further Along *Alex Evans, Media Molecule*	At Least We Aren't Doing That: Finding and Fixing Real Life Next-Gen Performance Mistakes *Alan Murphy, Microsoft*	Polishing the Bonnet: The Elbow Grease that Made Project Gotham Racing 4 Shine *Beverly Bright, Bizarre Creations*	TBC	Total Focused Development: The Black Rock Way *Jason Avent, Black Rock Studio*
16.00 - 16.30	Break					
16.30 - 17.30	Why We Sold Our Studio – and Why We Didn't: A Candid Discussion About Selling Up or Staying Free *Ed Fear, Develop; Sarah Chudley, Bizarre; Ian Baverstock, Kuju; Paul Wedgwood, Splash Damage*	Elephant in a Shoe Box *Craig Wright, Sumo Digital*	Using Voice as an Interface into Gameplay *Matt Bellows, Vivox*	Secrets, Exclusives & Lies *Ste Curran, Zoe Mode*	TBC	Creating Drama From Script to Gameplay *Tameem Antoniades, Ninja Theory*
Evening	Develop Industry Excellence Awards					

DEVELOP INDUSTRY EXCELLENCE AWARDS: July 30th

Now in its sixth year, the Develop Industry Excellence Awards is the only event which rewards the work done by Europe's leading games development companies.

The 2008 ceremony will be held at the Hilton Metropole, Brighton on Wednesday July 30th – over 500 leading games industry execs are expected to attend.

Over 60 companies from across Europe are shortlisted. Details on the finalists can be found online at developmag.com/develop-awards.

If you'd like to attend, please contact Jodie.Holdway@bhpr.co.uk or call +44 (0)1462 456 780 – but hurry, as tickets and tables are quickly selling out.

TRACKS KEY

- DESIGN
- PRODUCTION
- CODING
- BUSINESS
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- AUDIO
- WORLD VISION

Thursday July 31st: Conference

09.00 - 09.30	Registration				
09.30 - 10.30	**New Revenue Streams** *Jon Jordan, Develop; David Miller, Double Fusion; Ed Bartlett, IGA; Antoine Doumenc, Nokia; Frank Campbell, Mindark*	**KEYNOTE: Working Hard and Having Fun: How We Made Uncharted** *Richard Lemarchand, Naughty Dog*	**Movies Aren't our Friends: Popular Culture and its Study as Tools for Games** *Matt Southern, Evolution*	**Sticking Atmospheric Scattering Where the Sun Don't Shine** *Damiano Iannetta, Rare*	**Snakes!: Implementing Python in your Game Engine** *Doug Wolff & David Hawes, Eutechnyx*
10.30 - 11.00	Break				
11.00 - 12.00	**The Truth About Developing Video Games on Time** *Andrew Eades, Relentless*	**Before Pixels and Polygons: Using Traditional Art to Guide Development** *Cumron Ashtiani, Midway Newcastle*	**How to Make Children Cry** *Jonathan Smith, Traveller's Tales*	**KEYNOTE: Halo AI Retrospective: Eight Years of Work on 30 Seconds of Fun** **Damian Isla** **Bungie Studios**	**Secrets of Process Excellence: Latest Evidence from Industry Leaders** *Jonathan Sapsed, Brighton University*
12.00 - 13.00	Lunch & Opinion Jam 2008 (*Ste Curran*)				
13.00 - 14.00	**KEYNOTE: Framestore and Golden Compass: Tools and Techniques of Visual Effects** *Andrew Lomas, Framestore*	**Army of Fun: The Team That Created Patapon** *Atsushi Ii, Pyramid & Junichi Yoshizawa, SCEJ*	**Physical Gaming and Cameras: Out of the Lab and into the Living Room** *Diarmid Campbell SCEE*	**Censorship in Britain: What Really Happened with Manhunt 2** *Vincent Scheurer, Sarassin LLP*	**The Brighton Brainstorm: Solving the Industry's Biggest Challenges** *Jason Della Rocca, IGDA*
14.00 - 14.30	Break				
14.30 - 15.30	**Fable 2 Art Showcase** *Ian Lovett and John McCormack, Lionhead Studios*	**Games Up? session** *Ian Livingstone, Eidos; David Braben, Frontier; Sarah Chudley, Bizarre; Chris Deering*	**Doing it Yourself** *Alex Wiltshire, Edge; Jeff Minter, Llamasoft; Paul Preece; Sean Cooper*	**Stop Guessing, You're Crap At It: Design and Production by Numbers** *Caspar Field Relentless Software*	**The A-to-Zubo of Innovation: How Bright Light said No, No, No to get a Yes** *Harvey Elliott, EA*
15.30 - 15.45	Break				
15.45 - 16.45	**Re-rendering Magical Movie Moments in Games** *Phil Gray, Traveller's Tales*	**How to get Real Emotion into Your Game World** *Marek Walton, The Mustard Corporation*	**Building World-class Art Tools** *Luke Helliwell, Realtime Worlds*	**Why You Should Care About Alternate Reality Games** *Margaret Robertson*	**An Introduction to IP Management and Discovery** *William Latham, Games Audit*
16.45 - 17.00	Break				
17.00 - 17.30	**Buzz: The Games Industry Quiz** *David McCarthy; Jonathan Smith, Traveller's Tales; Charles Cecil (other contestants TBC)*				

The Audio Track (runs Thursday, July 31st)

09:10 - 09:30	Audio Track Introduction *John Broomhall*
09:30 - 10:00	Can You Hear Us Now? Dolby's New Solution For Online Games *Paul Boustead, Dolby San Francisco*
10:00 - 10:50	Welcome to our World *Robin Beanland, Dave Wise & Steve Burke, Rare*
10:50 - 11:00	Break
11:00 - 11:40	Audio For Multiplayer & Beyond: Mixing Case Studies From Battlefield: Bad Company & Frostbite *David Mollerstedt, EA DICE*
11:40 - 12:00	Break
12:00 - 12:30	The Deaf Leading The Blind: Understanding Why Our Clients Care Less About Our Work Than We Do Is The Key To Making Them Care More *Ciaran Walsh, Zoe Mode*
12:30 - 12:40	Break
12:40 - 13:20	Let there by Life: Conveying Emotion & Characterisation Through Audio. *Adele Cutting, EA*
13:20 - 14:10	Lunch Break
14:10 - 14:40	Sonic Stories: Using The Next-Generation Mindset To Harness Creativity And Evolve The Art And Craft Of Videogame Audio *Chris Sweetman, Splash Damage*
14:40 - 15:20	What We Might Learn From 80 Years of Movie Sound: The Storytelling Power of Sound *Paul Moore*
15:20 - 15:30	Break
15:30 - 16:10	Room For Improvement: Strategies For Successful Game Audio Production *Garry Taylor, SCEE Cambridge*
16:10 - 16:30	Break
16:30 - 17:20	Audio Keynote Panel: What can movies and games learn from each other? *John Broomhall; Dan Bardino, Sony Computer Entertainment Europe; Adele Cutting, EA; Alex Joseph, Tom Johnson & Nick Wiswell, Bizarre Creations*
17:20 - 18:00	Open Mic: The Game Audio Dabate & **Free Beer** *Speakers: all attendees – a chance for everyone to air their views on the future of game audio*

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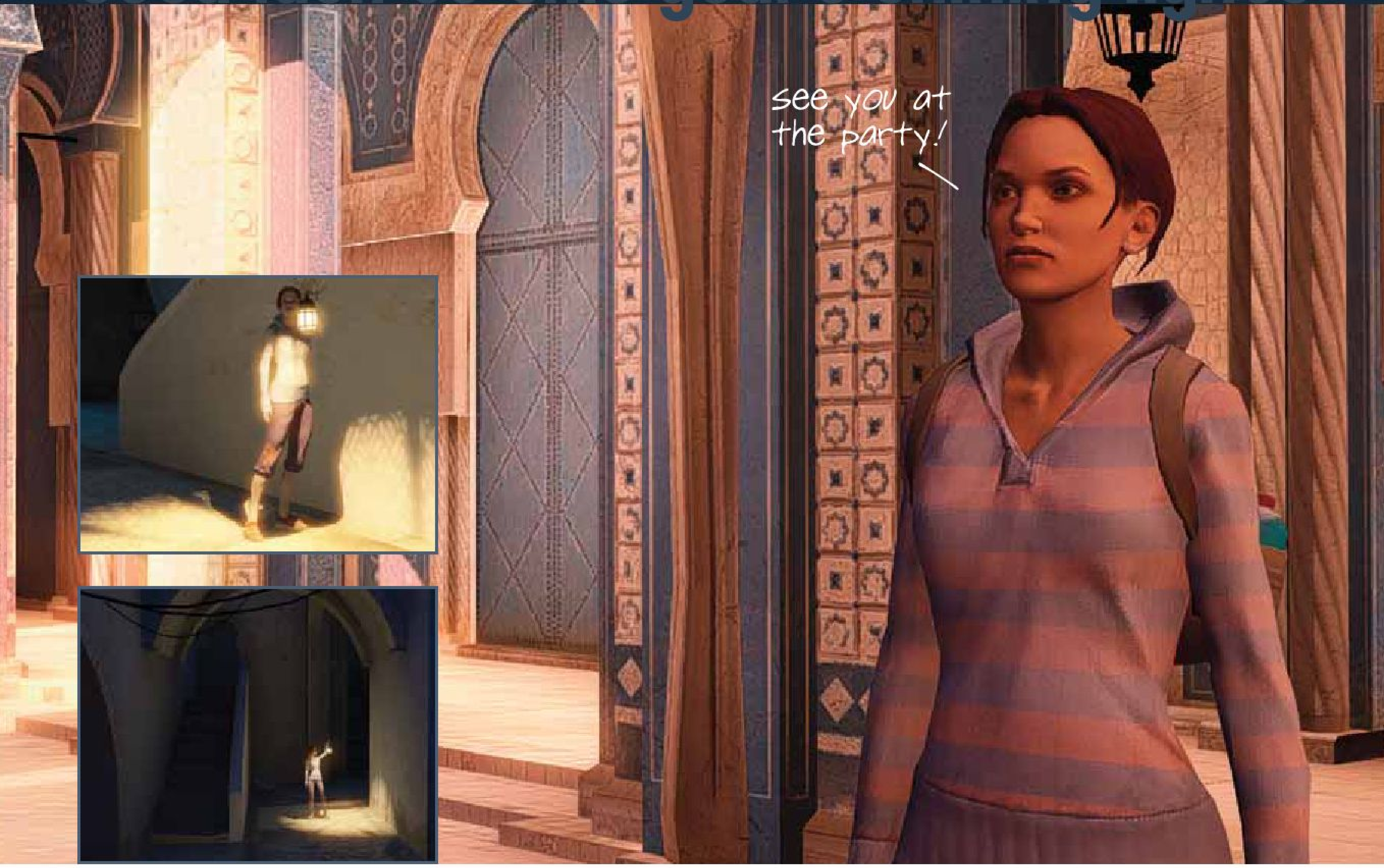

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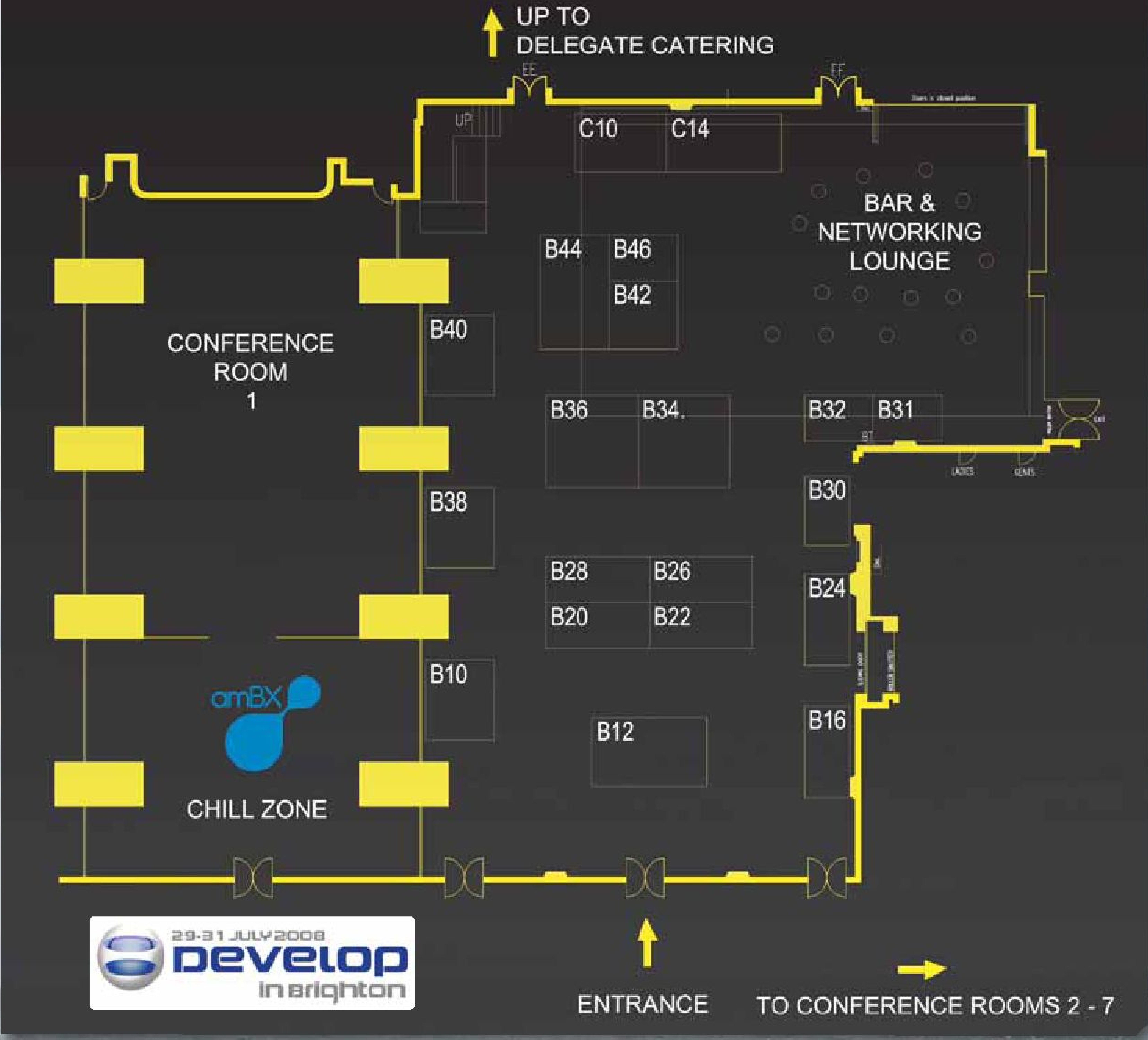
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TO CONFERENCE ROOMS 2 - 7

EXPO: JULY 30th & 31st

Running alongside the Conference is the Develop Expo, which is free for visitors to attend and brings together some of Europe's most innovative companies from every sector of games development.

For visitors, it offers the opportunity to find out about the latest development tools and technology, to try them for yourself, as well as make new contacts and catch up with old ones in the networking areas.

The Develop Bar & Networking Lounge is located on the Expo floor so you don't have far to go to buy a colleague a drink, have an informal meeting or just mix with other visitors.

Last year, 1,211 developers from 29 territories and representing just under 500 companies came to the Conference & Expo.

Currently confirmed exhibitors are listed below - but more will be confirmed throughout the month.

amBX Chill Zone amBX
B22 Amiqus
B30 Cambridge Research Systems
B34 Develop Magazine
B32 Digital Governance
B12 Dolby
B16 Emergent Game Technologies
B24 fmod
B42 Hansoft
B20 Imagine Animation
B10 Scaleform Corporation
B36 SEMN
C14 Splash Damage
C10 Tech Excel
B28 Wired Sussex

FULL STEAM AHEAD

Some of the biggest developers are saying that the PC is dying as a gaming platform. But one in particular – Half-Life and Portal creator Valve – thinks that the PC is where the next generation is going to happen first, as **Ed Fear** finds out…

Apparently, the PC is dead as a gaming platform. Piracy, increasing console userbases, the nightmare of drivers and infinite hardware combinations – all too much for the increasingly profit-hungry industry.

Which makes it all the stranger to be sitting in Valve's industrially-themed meeting room – more prominent pipes and metalwork guns than executive plush – alongside a handful of other journalists from across the world. After all, if PC gaming is dead, why is Valve still here?

The answer, you might be thinking, is that Valve exists in a bizarre in-between space. It's primarily a developer, but it only partners with publishers for distribution. It's a developer, but it also publishes other people's products online through the massively-popular Steam network. It's a developer, but – well, it's more.

Is that why Valve is still here? Is this why we're all assembled here? The answer, perhaps unsurprisingly, is no. The reason, it soon manifests, is that Valve is concerned – or perhaps more accurately perplexed – about the bizarre sequence of stories and reports that has sparked this poor platform's funeral procession. Rather than being a development graveyard best left fallow during the console crop's harvest, Valve is keen to get the message out that, actually, the PC is the best place for a game developer to be.

SEEING THINGS

"There's a perception problem: the stories that are being written are not a true reflection of what's really actually happening," explains Valve co-founder and honcho Gabe Newell.

> ***"The PC has a perception problem: the stories being written aren't a true reflection of what's happening…"***

"I mean, go ask [Blizzard president] Rob Pardo if PC gaming is dead – if he can take the time out from making money hats, I'm sure he'll give you a really eloquent explanation of why probably the most valuable entertainment franchise of the moment is PC-specific."

The misconception stems from the fact that online commerce – be it sales of digitally distributed games, subscriptions, micro-transactions or whatever – remains untracked and under-represented by organisations such as NPD and ChartTrack, and it's leading analysts to make assumptions based on massively incorrect data. Is it fair to judge a market on figures that don't include the fact that, for example, Blizzard makes $120 million in gross revenue a month? Or on figures that usually only reflect English-language territories, ignoring massive opportunities such as China and Korea and emerging markets like Russia?

Even if you just consider vanilla MMOs alone, the figures significantly out, says Newell. "Essentially, Blizzard is creating a new *Iron Man* each month in the studio in terms of the revenue they're generating.

"Any movie studio that was doing that would be heaped with praise, but all of this is essentially invisible to the way that data is being aggregated and recorded. You've got MMOs, online, ourselves, GameTap, Metaboli, PopCap, RealArcade, Nexon – and all are completely invisible to business press and stock analysts."

Not everyone has the infrastructure or time to develop a *World of Warcraft* competitor, of course – and even those that do still can't seem to find that special something – but that's actually the point Valve is really trying to make: that by embracing online and treating games as an ongoing entertainment 'service', small teams can make tight games and foster a community that can continue to support a company for a long time, much in the way that *Warcraft*'s player base sustains Blizzard.

Experimenting with player relationships in this way can only really be done on the PC, Newell explains, because the PC's open nature means that it's the best place to innovate, and the only place you can try out new models without the restrictions of a format holder.

"It's the place where innovative new business models are coming from. Given the vast amount of R&D done on the PC, consoles are really just becoming stepchildren of the capital investments being made there. In the future, in the 2010 timeframe, the next generation of gaming standards are going to be established not by the Nintendos and Sonys of this world, but by Intel and Nvidia."

TANGLED WEB

If you're wondering why Valve is championing the online model, well, it thinks it has a solution – Steam and Steamworks. The combination of the Steam delivery platform and the free Steamworks community functionality can provide developers with detailed play metrics, helping designers to recognise choke points or imbalances and then iterate accordingly.

"Not only does doing that help your business people make better decisions, it's also having a huge impact on game designs themselves," says Newell. "Iteration and managing risk are the keys to being able to innovate – we really believe that taking smaller, riskier steps will end up taking your game designs further faster."

And if you want an example, look no further than Valve's own *Team Fortress 2*, which has been updated 53 times since its October 2007 release in response to player feedback.

"It's really about having an entertainment service with the community – all of our decisions are geared towards how can we do something that's interesting and exciting. If we see that users want movies in *Team Fortress 2* – like we are – and we can see its impact on sales and on gifting, well yeah, we're going to do that. It's moving towards that mindset – people thinking 'how can I generate web hits on to my servers?' are much closer to the mentality for what's going to be successful going forward."

Newell is quick to mention that, in all fairness, it shouldn't be Valve championing this particular cause – the aim is not to promote Steam, rather the PC as a whole – but that the decentralised management structure of the PC platform means that there's no PR army on hand to put a positive spin on any story. "The people who traditionally drive these messages, like Intel or Microsoft or Apple, are not very effective for various reasons," he explains.

"Intel and Apple both have anti-gaming positions that they've traditionally followed – although that's changing now. Microsoft has clearly decided to create a closed proprietary platform so that they don't have to compete with the YouTubes and Googles of the world. The success of everyone else in the space effects all the others – if Nvidia does better, we do better. If Crytek makes an awesome engine, it'll drive Intel's sales. We recognise that we're part of this and we're trying to do our part."

Newell is also at pains to point out that they're not trying to usurp the PC Gaming Alliance established earlier this year by Microsoft, Intel and Nvidia – it is interfacing with them in some capacity, he confirms – it's just that Valve tends to believe that "actually shipping products is one of the best ways to make things move forward," admits Newell.

"I think that *Wrath of the Lich King* [the new *World of Warcraft* expansion] will have a larger impact on moving the PC forward as a gaming platform than companies sending representatives to meet and decide that PC gaming should be doing better."

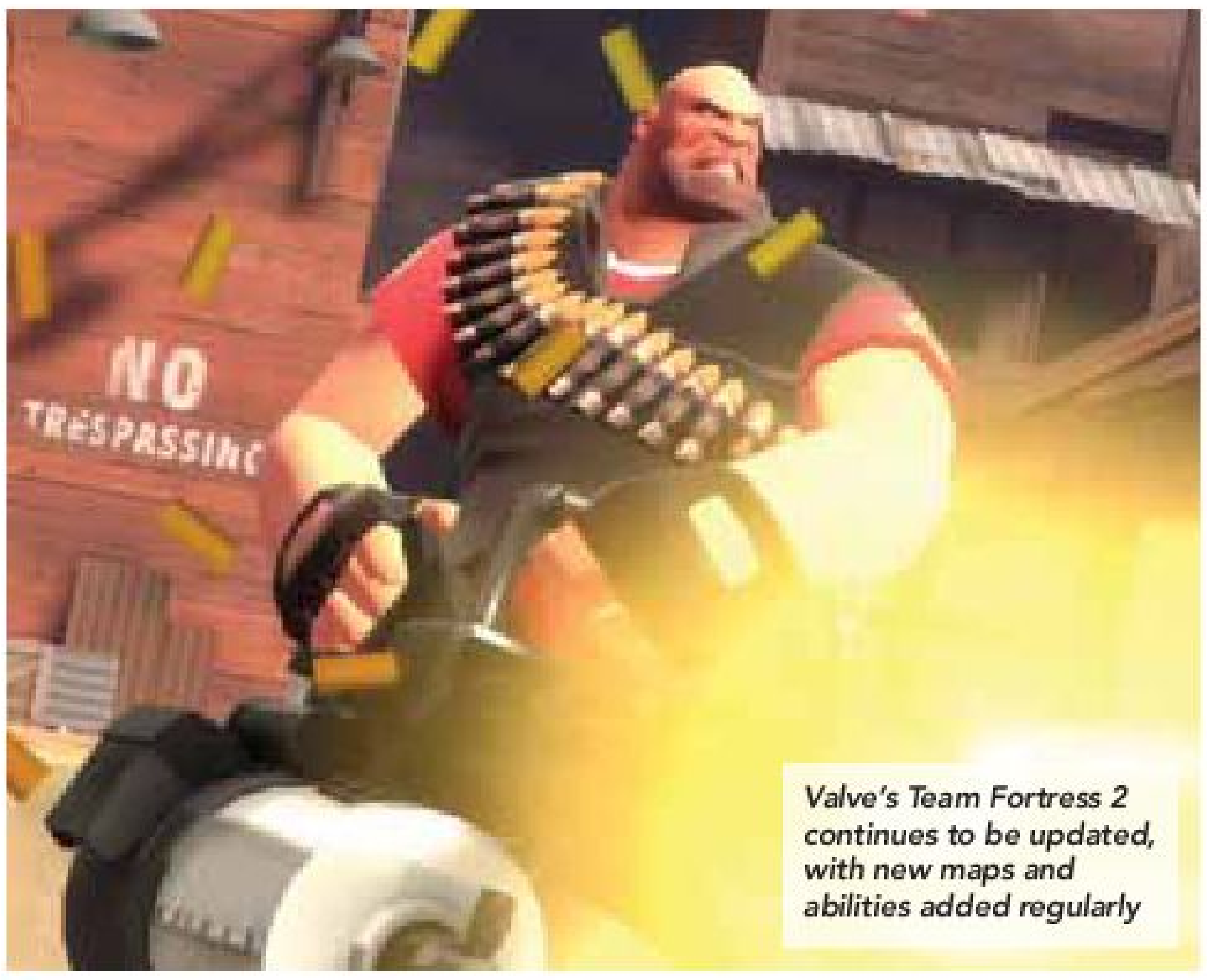
CHAMPIONS LEAGUE

Newell is very quick to point out that Valve is not trying to position itself as the champion of PC gaming, mentioning not only competing services like GameTap and Metaboli, but also singing the praises of other developers doing more impressive things in the PC space. Newell specifically points to Blizzard – "They engage with their community in great ways, like getting fans to participate in art. That's something I'm really jealous of," – and Korean studio Nexon: "Using the rabid fans to subsidise your casual fans and generating more money than charging for the game upfront is fascinating. We wouldn't have thought of that at all.

> ***"Taking smaller, riskier steps will end up taking your designs further, faster…"***

"I think that, actually, other companies are ahead of us. But this is a transition that the whole industry is going to do, and it's a lot more feasible to make this transition on the PC than it is on other platforms," he says.

"I think providing an ongoing entertainment service to my customers will be the best decision financially, from a game design position and from a productivity and quality standpoint. Having real time data on game player behaviour is hugely more important to making good decisions going forward as a game designer than your fill rate or how many polygons you're throwing around."



Valve's Team Fortress 2 continues to be updated, with new maps and abilities added regularly

Audiosurf exploded from an IGF finalist to a massive hit thanks to community interaction

A STEAMY PREVIEW

Valve also took the chance to tell us what would be coming in the near future to its Steam platform, many of the features of which have been designed to eliminate – or at least minimise – the problems that many people have with PC gaming.

First up is Steam Cloud, a new persistent data storage allocation on the Steam servers for every user, exposed to developers as a simple API as part of the free Steamworks SDK. At first Valve plans to update the *Half-Life* series to save games to this network store, meaning that games can be continued on different machines or even after an uninstall – but it has bigger plans for the future. Next to come will be support for saving screenshots and videos from other games like *Team Fortress 2* and its forthcoming co-op zombie survival game *Left 4 Dead*, helping kick-start the user-generated content revolution for not only itself but any of the other developers using the SDK.

Further down the line, Steam will address one of the other criticisms levelled at PC gaming by providing automatic driver updates for users, a move that should also help strain on publishers' support centres. The team even says it has enough data to be able guesstimate a game's performance on a particular system, warning users if they're about to purchase a title that won't run optimally and even suggesting new hardware and predicting the frames-per-second increase that such an upgrade would bring.

Even mooted is the ability to scan running processes for notorious cycle-hogs (Newell cheekily joking that, in his opinion, "the two biggest viruses in the world are *Norton* and *QuickTime*") and even the distribution of non-gaming applications on Steam.

Summer, Sea, Sand and More...

July is finally here and the Develop Conference & Expo is only a few weeks away.

Once again, it offers a packed programme with over 60 sessions, workshops and masterclasses by more than 80 international speakers, together with unrivalled networking opportunities and the odd party.

You've only got to look at the line-up to realise that if you're involved in games development, there's only one place to be this July!

Tuesday 29 July

29 JULY 2008 DEVELOP MOBILE IN BRIGHTON

Develop Mobile - Develop in Brighton's mobile day is expanding to offer two tracks - Business and Development - with focussed sessions on everything from the latest 3D technologies to case studies of successful games, proven techniques for launching a new IP, and cross-platform casual games design.

29 JULY 2008 DEVELOP ONLINE IN BRIGHTON

Develop Online - Online Gaming is booming in Europe. Develop Online gives a unique opportunity for European developers to come together to share their insights for a day.

GAMES:EDU:08 Developing the developers of tomorrow

GAMES:EDU - brings together the foremost educators to connect directly with computer games developers and producers, exchanging ideas, and discussing best practice and perspectives.

Wednesday 30 July & Thursday 31 July

29-31 JULY 2008 DEVELOP IN BRIGHTON

Develop Conference & Expo - is where the European developer community come together to learn from each other and share experiences, be inspired by world renowned experts and gurus, get up-to-date with the latest development tools and techniques, make new contacts and catch-up with old ones.

Headline Keynote

BioShock and Awe: Immersing the Gamer in an Alternate World without drowning out the Gameplay

Ken Levine, Christopher Kline, Nate Wells. Bill Gardner
BioShock, 2K Boston

Keynotes

PRODUCTION KEYNOTE
Working Hard and Having Fun: How Naughty Dog Made Uncharted: Drake's Fortune
Richard Lemarchand, Naughty Dog

DESIGN KEYNOTE
Why the Future is Brighter than Ever
David Braben, Frontier

BUSINESS KEYNOTE
The Broadening Imperative
Phil Spencer, Microsoft

CODING KEYNOTE
Halo AI Retrospective: 8 Years of Work on 30 Seconds of Fun
Damian Isla, Bungie Software

ART & ANIMATION KEYNOTE
Framestore and The Golden Compass: The Tools and Techniques of Visual Effects
Andy Lomas, Framestorm

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29-31 JULY 2008

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Just some of the other sessions include:

Production

Total Focussed Development - The Black Rock Way
Jason Avent & Alice Guy, Black Rock Studios

Stop Guessing, You're Crap At It: Design and Production by Numbers
Caspar Field, Relentless Software

Creatives and how to get the Best out of them
Paul Barnett, Electronic Arts

Minimizing to Maximize: Harnessing Accessibility to Strengthen Game Design and Brand Identity
Tommy Francois, UbiSoft

Design

Talking Games
Matthew Bellows, Vivox

How To Make Children Cry
Jonathan Smith, Traveller's Tales

Movies Aren't Our Friends
Matt Southern, Evolution

New Gameplay Dimensions in Role-playing Games
Peter Molyneux, Lionhead Studios

Business

Why we Sold our Studio - and Why we Didn't
Sarah Chudley, Bizarre Creations; Ian Baverstock, Kuju Entertainment; Michael French, Intent Media; Paul Wedgwood, Splash Damage

The truth about Developing Video Games on Time
Andrew Eades, Relentless Software

An Introduction to IP Management and Discovery
William Latham, Games Audit Ltd

New Revenue Streams Showcase
Jon Jordan, Pocket Gamer (Moderator), Ed Bartlett, IGW, David Miller, Double Fusion, Frank Campbell, Mindark/Entropia

Coding

Snakes! : Implementing Python in your Game Engine
Doug Wolff & David Hawes, Eutechnyx

At Least we aren't doing that: Finding and Fixing Real Life Next Gen Performance Mistakes
Allan Murphy, Microsoft

Physical Gaming and Cameras: Out of the Lab and into the Living Room
Diarmid Campbell, Sony Computer Entertainment Europe

A Complete Xbox 360 GPU Particle System: Tech & Pipeline
Simon Scarle, Rare

Art & Animation

Re-Rendering Magic Movie Moments
Phil Gray, Traveller's Tales

Creating Drama from Script to Gameplay
Tameem Antoniades, Ninja Theory

Before Pixels and Polygons: Using Traditional Art Techniques to Guide Technology
Cumron Ashtiani, Midway Newcastle

Heavenly Sword Cinematics: Real Emotion in Real-Time
Stuart Adcock, Ninja Theory

World Vision

Why you should care about Alternative Reality Games
Margaret Robertson, Industry Consultant

Secrets, Exclusives & Lies
Ste Curran, Zoe Mode

One Life Left
Ste Curran, Simon Byron, Ann Scantlebury

Audio

Welcome to our World 2008 - A Rare Insight to Rare's Celebrated Audio Department's Inner Workings
The Rare Audio Team: Robin Beanland Grant Kirkhope, Dave Wise, Steve Burke

Can you hear us now? Dolby's new Voice Solution for Online Games
Paul Boustead, Director, Interactive Voice Technology, Online Game Technology Group, Dolby Australia

The Deaf leading the Blind. Understanding why our Clients Care Less about our Work than we do is the Key to Making them Care More
Ciaran Walsh, Audio Director, Zoe Mode

Audio For Multiplayer & Beyond - Mixing Case Studies From Battlefield: Bad Company & Frostbite
David Möllerstedt, Head Of Audio, DICE

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MEET THE NEW BOSS

Earlier this year, Sony announced the appointment of SCEA boss Shuhei Yoshida as the new president of SCE Worldwide Studios following the departure of Phil Harrison. In one of his first interviews since taking the role, he discusses plans for the PlayStation formats and internal studio strategy with **Michael French**…

With Ian Stringer as CEO, Kaz Hirai in charge of PlayStation and now yourself in charge of SCE studios, plus other key promotions at SCE WWS lately, it seems like there is a brand new management team in place to oversee the topline games strategy for Sony. Is that a fair assumption?
The new strategy Kaz has been implementing internally is a total departure from what it was under Ken Kutaragi, who himself was a visionary and a technologist.

What Kaz is changing means that all the parts of SCE group, including the Worldwide Studios and the International Headquarters, participate and collaborate in forming the future strategy of the PlayStation. That means future strategy for the company as well. That's the major massive change to how we work internally.

What advantage does pushing for more communication between the studios provide?
Well, that was always the strategy behind the Worldwide Studios. And I was managing studios in the US and Phil was managing studio in Europe – so we were peers, but when he became president of the worldwide studios, there were key things we wanted to accomplish, such as getting the technology teams in each region to collaborate to help create a technology base for our use for the launch of PS3. That went pretty well – so much so that we realised that perhaps we should share all this with third parties. That's a good example of what Phil and I worked hard to achieve.

And now, as you say, all the studios must communicate better to share things like best practices. So one studio might be really good at user testing the game – and our other studios in other regions should learn from them. Or a studio in another territory might be doing really good project management – so we should really all learn how they are doing it so well.

Are there any specific examples you can give of where one studio has learnt from another?
A good, small example is from towards the end of the development of *Heavenly Sword*. The *God of War* team members, the technical and design team, were working with the *Heavenly Sword* team to give feedback and share how they do things, because they were working on the same kinds of issues such as AI and character animation.

You've spent time at both SCEA and Sony Japan – how do they compare? And how will you use those experiences to inform what you do going forward?
There are major cultural differences between the two and also different ways in which people work. I really enjoyed working in the Japan studio with people like Kazunori or Ueda-san – there are lots of great creative and ambitious people there. But it was very difficult to form a team because people in Japan do not think to move, they are more loyal. That's great if you have people employed, because they will not leave but because we were a newcomer to the industry and I was in charge of growing he internal team I really struggled to bring in experienced people in Japan. But in the States, because people are always moving around, if you have a good company reputation and good strategy and good position it is much easier to attract talent.

> *"We have always been a fan of adding new interfaces to the core platform…"*

Prior to the formation of WWS there was a perception that there was conflict between SCEA and SCEE. At the least they were competing. As you've been working across Sony would you say that still exists? Or has WWS helped iron that out?
Well, I think healthy competition is really good because we want people, each team, to know that their game will be a big hit around the world. So we want teams to have high aspirations – that kind of competition is really good. But because development is now such a big effort unless we collaborate and share we cannot compete in terms of larger things or we will be very inefficient when we make games. There is a realisation in this generation that we as an industry cannot do what we were doing before – which was make things in more isolated, smaller teams. Phil and I worked hard on getting that major culture shift within the Worldwide Studios.

And is that culture in place now?
Yes, I feel really good about how people are working together.

When your appointment was announced as head of WWS, one of the things mentioned by Kaz Hirai was that you would be expanding the market. How will you do that?
This is something I think we have been saying, and what Phil was pushing – his studios worked on *EyeToy*, *SingStar*, *Buzz* and social gaming – and now it's a big hit with *Guitar Hero*, *Rock Band* and the Nintendo Wii. Because we want every household to have video games, we are really only halfway there from our future ambition – so that was the push that PlayStation group had. And it is achievable in the future.

Do you feel obligated to do what Phil Harrison did, and greenlight the next *EyeToy* or *SingStar*, so Sony is still delivering new products to widen the market?
In terms of tactically –absolutely, yes. We have always been a fan of adding new interfaces to the core platform to create some unique experiences, so we will definitely continue do that. But there are also new users coming into the space – many of them choose Nintendo Wii for the first platform as it is easy and fun, but when they have fun, some of them will think 'Perhaps there is something more out there I can play'.

So you can position PlayStation as the platform that brings those new consumers closer towards bigger or deeper experiences?
Yes, in my mind Nintendo and Sony and Microsoft are conspiring to really expand the market together. It didn't work that way in the prior generation because all three companies tried to get the same market. Nintendo made a very good choice for all of us to go for a completely different direction and bring new users into the industry.

You were talking about finding new ideas tactically; will they be internally made, do you think, or through external studios?
It doesn't really matter – we are always searching for new ideas from our internal teams or external developers. *LittleBigPlanet* is a great example of an external, highly creative team bringing in new ideas.

The WWS operation is quite large – do you plan to grow it?
I think that we have more projects that we want to do than we do have resources. So, the recent cancellation of *Eight Days* was not necessarily because that project was failing, but because we looked at how it fit in the portfolio and where it fit as a production. We have been constantly investing, and every year we are spending more money on more people. And that will continue.

Ubisoft has tapped into a lot of emergent markets in its expansion – is that something Sony Worldwide Studios could do?
Yes, I have been watching them closely and I always have been amazed at how well they do. Many years ago we visited Ubisoft Shanghai, in 2002 or 2003. Back then they were just doing porting work, but now that team is developing original titles. That's a very special thing. And now Ubisoft has a studio in Morocco as well – they are clearly the innovators in terms of cultivating talent in new places. And many of us will follow them.

Is there an overall strategy for the PS3 games that WWS will make going forward when it comes to setting the agenda for the platform?
There are many areas but one focus that has been and will be key is how we use the online technology and PlaySation Network to involve

more consumers in participating. *LittleBigPlanet* is a major, major step forward in that this year. Prior to that we released *SingStar*, and I've been checking out people's videos – it's been very interesting to see that people enjoy publishing their performances. And the *Buzz* channel – I can't wait to see the strange questions people come up with for that! So that's the major common theme that we are trying to enforce with all our projects.

You mentioned the cancellation of *Eight Days* and *The Getaway* – were those two things related? The two games seemed to be big, typical single-player games – not online experiences…

If I am truly honest that was part of the consideration. As I say, there are many projects we want to do and we look at many different angles for them, such as profitability, how long it may take, and where it fits in the portfolio – along with other strategic aspects that we are trying to delivery for the platform. So it was just one of the issues.

Would you say that there's a move away from those big budget games towards the *SingStar*-like experiences which can self-sustain themselves via the sale of content online after release?

We do both types of game and spend a lot on making various kinds of games. Really, it's just a balance between them.

And what about the PSP – what's your strategy for that?

The PSP hardware sales are doing well – it's actually doing better than we planned for, there is in fact a big of a shortage on the hardware. But because we are first party we have been focusing on releasing titles developed just for PSP. Many of them do very well from a business standpoint and also get critical acclaim. It's a key lesson – you cannot develop a game for one platform and try to retrofit it for others. It doesn't work. You might sell certain numbers, and that may be a good business, but it's not as good a business if the game is developed for the PSP. And because of all this growth in the industry and new opportunity the first parties have to make the big decisions on resources.

> *"Nintendo, Sony and Microsoft are conspiring to really expand the market together…"*

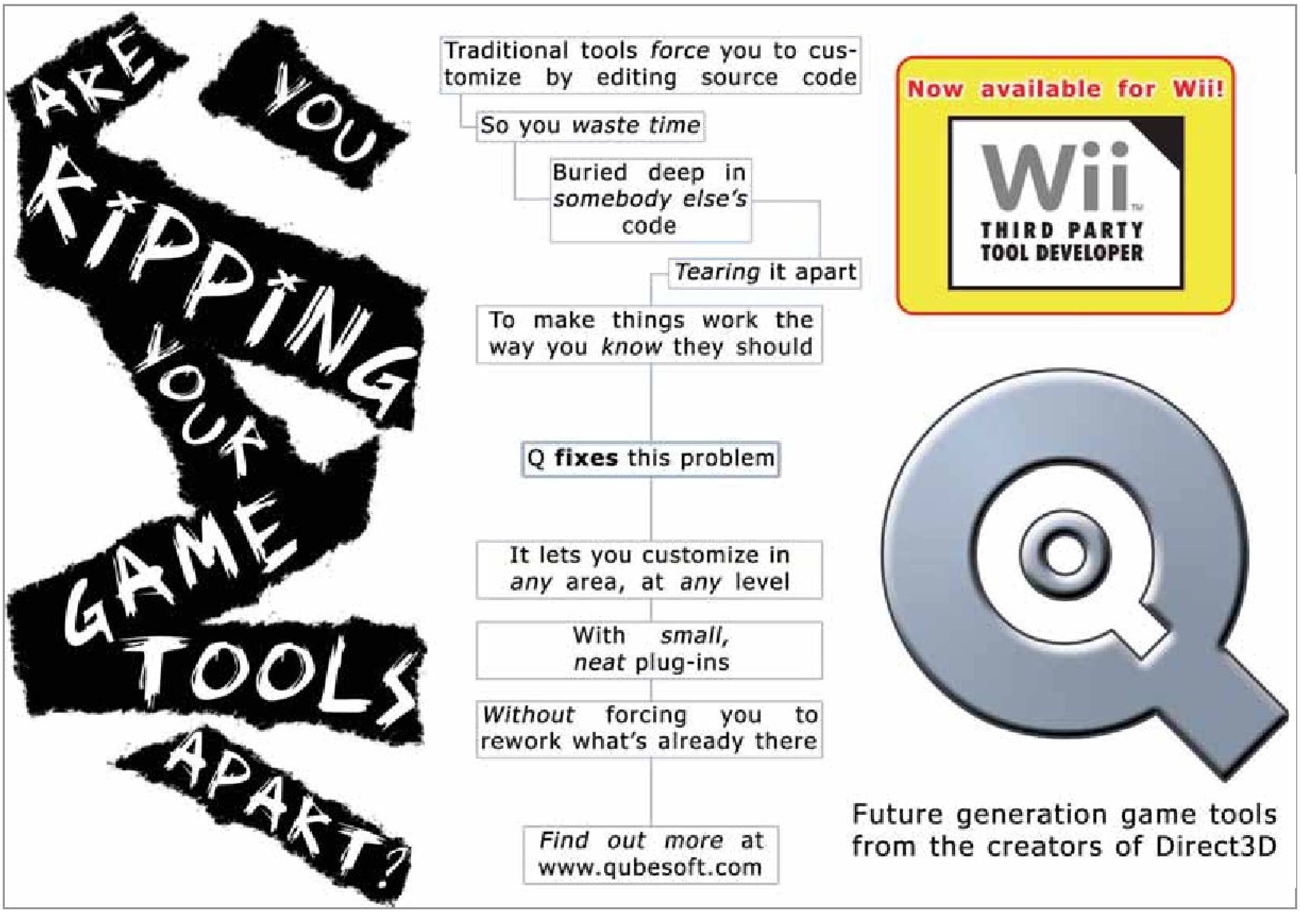
So as a company we have to continue to show what PSP can do and how unique the experiences are on the platform when you develop a game exclusively for that platform. Because there is no direct competitor to the machine, it's an opportunity. That might be a bit of an issue from a business standpoint, because if there are similar platforms you can plan for multiple SKUs, but Wii, DS and PSP – each is unique so its games need to be focused more. I hope more and more third-party publishers see the PSP as an attractive opportunity.

Are you having to think more about games with global appeal these days? Or can you still produce territory-specific releases?

We are pushing more and more titles to think global, but we also know that there are major cultural differences. Especially between the Asian markets. And there are of course differences between the US and Europe, as well. So we continue to support local tastes because each region has to be successful. But from a commercial standpoint we want many titles to appeal to many regions. That's the balance – we've been pushing for more games to have global appeal.

Comparing the titles released on PS3 with those on PS2 and PSP, the interesting thing is that, for games made by Worldwide Studios, the top ten games were released in all markets. But for PS2 and PSP only three or four were made by internal teams. So the strategy is working – but without compromising what we make.

READ THE THE EXTENDED INTERVIEW ONLINE AT WWW.DEVELOPMAG.COM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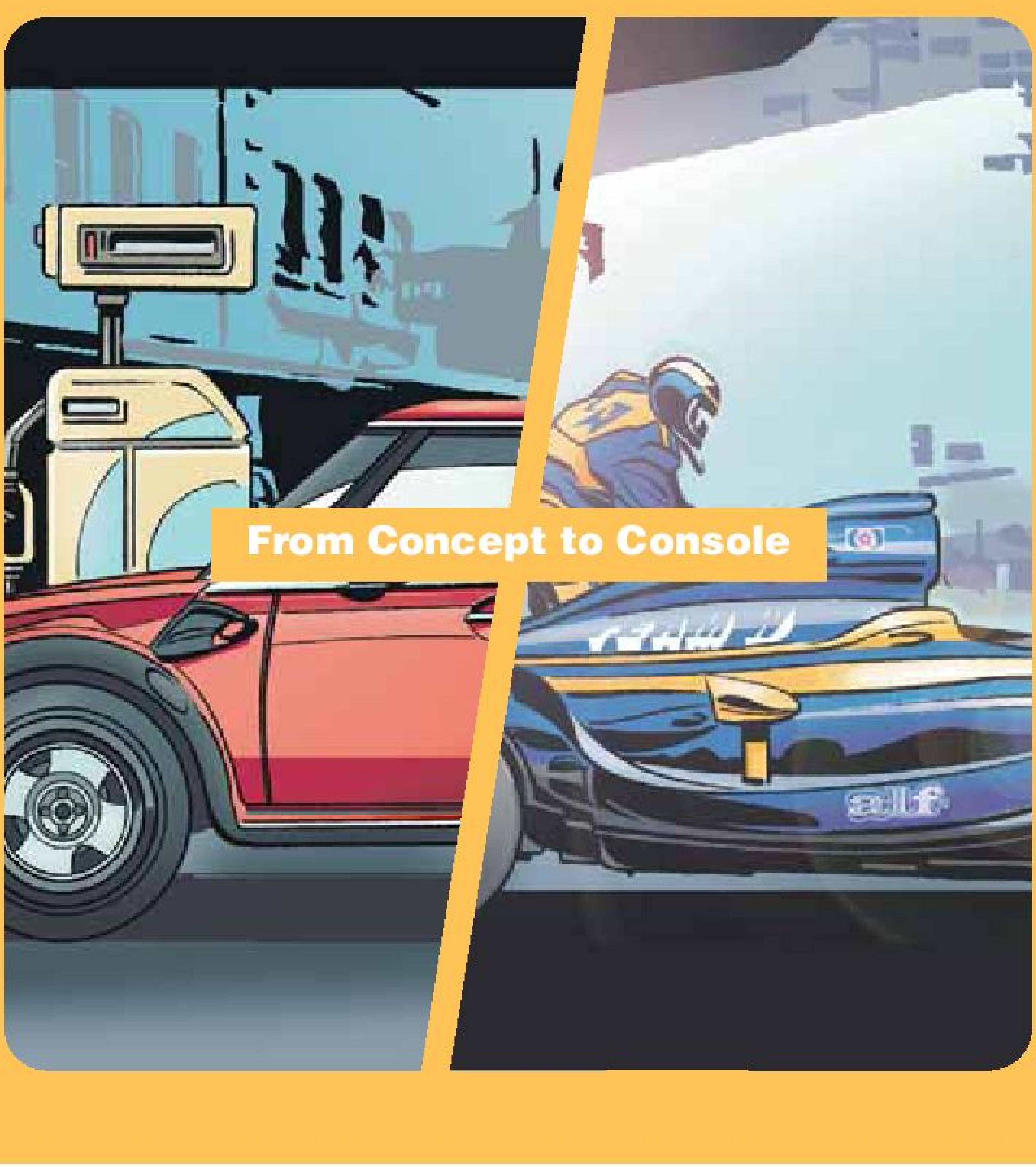

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BUILD

THE LATEST TOOLS NEWS, TECH UPDATES & TUTORIALS

> **"The future craft of sound design for video games is ours for the taking…" p71**

TOOLS: The latest tech news

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GUIDE: The hottest audio engines

p62

KEY RELEASE: VENUS Blue

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Opening the door

How embracing procedurally generated content can save you time, money, and space, p67

TUTORIAL: HANDLING MULTIPLE GPUS EFFECTIVELY > P74

Why selling your company is good business

YOU KNOW SOMETHING ODD’S going on when someone stands up at an industry event and tells one of your anecdotes and not only messes it up but also gets a bigger audience reaction than you did originally. The situation was compounded when chatting afterwards by being thanked for said anecdote, which you’d half forgotten was yours in the first place.

Still, after being accused of being both ironically clever and hoisted by my own petard with last month’s introduction, it’s probably best not to try and get too smart, and just focus on the task at hand – which, of course, is being too smart and trying to predict trends within game middleware.

On the back of Babel Media’s acquisition by another outsourcing company, one that has struck again is how little consolidation there is among the technology companies compared to the usual mergers and acquisition activity in other industries. The main reason seems to be if a middleware company is successful, then anyone who wants access to the technology can get it at a reasonable price, in which case the only point of owning the company would either be to gain an advantage over your competitors or for purely financial reasons – neither of which is core to game development.

This is – or should be – an issue for the people running middleware companies, however, as if there’s no opportunity to sell the businesses they’re building up, all they’re doing is subsiding game developers.

And I presume this will be the sort of issue we’ll be discussing at the panel talk at the Develop conference, entitled ‘Why We Sold Our Studio and Why We Didn’t’. If nothing else, maybe you’ll get to hear an anecdote you can claim for your own.

Jon Jordan
jon.jordan@intentmedia.co.uk

< AUDIO >

GIVING GOOD ORAL

Two years since its launch, Vivox’s online voice chat has plenty of publishers and gamers talking…

WHEN IT COMES TO writing about games middleware, perhaps too often the focus is on the years of struggle to gain acceptance with the big publishers and studios who hold the reins of power and make the money. That might be the harsh reality for most, but the real reason companies enter the games technology market is in the hope that the right product at the right price will find acceptance very quickly.

Take, for example, US in-game voice communications outfit Vivox. It first gained attention with its 2006 GDC demonstration of in-game Voice Over IP comms within EVE Online, as well as an neat show of dialling out to a realworld mobile number from a virtual red phonebox within Second Life.

The two years since have seen the company pull in plenty of commercial partners; notably Sony Online Entertainment, NCsoft and EVE Online’s CCP, as well as inclusion within the MMO platforms of vendors such as Simutronics, BigWorld and Monumental. The venture capital-funded company also raised around $8 million in its second round in late 2007.

Certainly Monty Sharma, vice president for product management and marketing, seems happy with the way things are going.

“We like to play games. We love being in the games industry. What amazes me is how decent everyone is. You don’t find people saying ‘I want this feature but don’t give it to any of my competitors’. I love it here,” he enthuses. “We’re going to work our tails off never to have to go back to enterprise software.”

Like a metaphor of the swan, moving gracefully through the water while its legs work frantically below, Vivox’s success hasn’t come without hard graft however.

“We have completely rewritten our backend and our SDK from scratch,” Sharma reveals. “We also do two major and two minor releases per year, as well as working with customers on interim releases for custom features that will eventually be rolled in the next main release.”

The result, he claims, is that the service, which is offered as a complete hosted service on Vivox infrastructure and integrated into games via the Precision Studio SDK, is now around 400 percent more efficient than the original; good news considering the number of concurrent users it now has to support.

“When I talk to ex-colleagues still in the telco space and tell them how many users we have to host, they can’t believe it,” he says.“Our engineering and operations teams have pulled off some amazing things to let us scale and manage the system. For example, what a lot of people don’t realise is, when a game comes back from downtime, all of a sudden you get 20,000 people simultaneously trying to log-in and join voice channels.
Those are hits most systems just aren’t engineered to cope with.”

At least, in business terms, Vivox’s main cost remains bandwidth – and that becomes cheaper the more you use.

As for the future, Sharma says the one frustration of the MMO space is that the development cycles are so long, many features and even titles using the Vivox voice service must, for now, remain under wraps.

One specific area he’s looking forward to however is the company’s Voicebox system. “It’s a fantastic voice-masking technology that’s been made in such a way that you can apply some very subtle shifts and so ensure that your voice remains understandable but also unique for each race and totally not recognisable as you,” he says. “I really think there are going to be forum wars about whether various races should sound like that or not once games are using it.”

www.vivox.com

Precision Studio SDK

Price: Available on request
Company: Vivox
Contact: +01 508 270 5090
www: www.vivox.com

One of the first games to use Vivox was EVE Online, which uses a hierarchical channel system to enable the control of vast squadrons

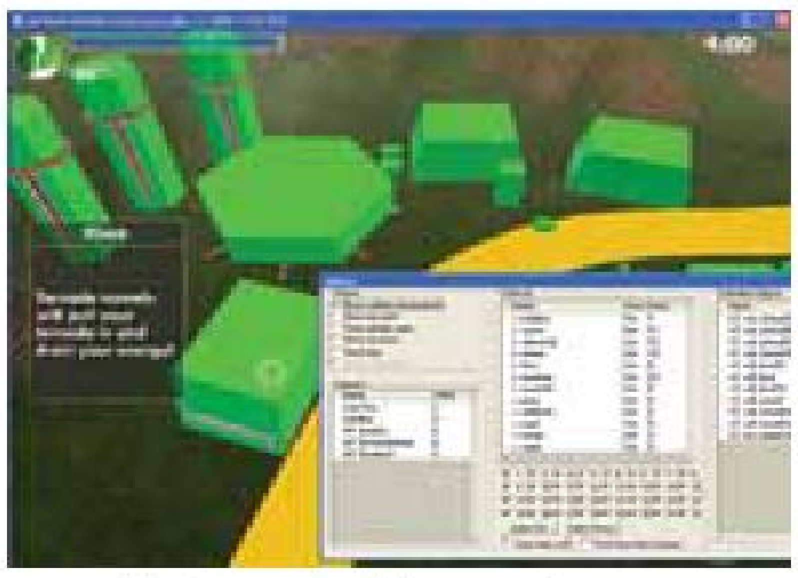
< CODING >

TAMING THE DEVELOPMENT PROCESS

Initially PSP-only, the Vicious Engine is maturing into a fully cross-platform technology…

Vicious Engine Ve2

Price: Available on request
Company: Vicious Cycle
Contact: +01 919 370 3000
www: www.viciousengine.com



IT'S EASY TO FORGET how much the games market has changed in the past five years. Triple-A games continue to gain the headlines but the explosion in alternative models – mobile, handheld, casual web, console download, advertising-driven or serious gaming – has provided plenty of opportunities for smaller, more fleet of foot developers. The same thing is also true for middleware companies, with a range of new providers springing up to offer new types of technology.

Based in the North Carolina games hotspot, Vicious Cycle is one such upstart. A studio that got early into PSP development, it decided to offer its Vicious Engine to similar aspiring developers, slowly building up its supported platforms from PSP, adding Wii and PlayStation 2, until now it covers the full gamut of options. Most recently however, it's seen the most interest from studios working on downloadable games for Xbox Live Arcade, WiiWare and the PlayStation Network. Recent licensees include Frozen Codebase and Epicenter.

"We didn't design the engine to be suited for downloadable games, but we did design it to be flexible and easy to use," explains Vicious Cycle's vice president and CTO, Wayne Harvey. "Because of this flexibility, it's easily modified to work within the confines of a downloadable game, and because of its ease of use, small teams are able to produce games on a limited budget."

Offering a complete game development environment, Vicious Engine also includes tools such as an built-in asset manager, debugging capabilities and a point-and-click scripting system; something Harvey points out is particularly important in this type of market as it reduces the need for programmers.

With such a foundation in place, the next step is to layer on more functionality; especially in terms of allowing developers to make the most out of PlayStation 3 and Xbox 360. Vicious Engine 2 (or Ve2), which is due out by the end of 2008, includes a new lighting system, an animation blending system, a material editor with full Shader Model 3.0 support, occlusion culling as well as new pathfinding and AI features.

These options will also be backed by further tools support. "We have always been a very data driven development group, so we've enhanced the art pipeline to simplify the process and help developers create high quality assets without getting bogged down in too many technical complexities," explains Harvey.

Vicious Engine provides a simple to use and flexible game engine covering everything from casual PC games to Xbox Live Arcade fare

Of course, when it comes to headlines, it's still the technology used in the tens of millions of dollar productions that will gain the headlines and industry accolades, but the Vicious Engine seems to be carving out its own niche with aplomb. Or as one licensee puts it: "It's easier to make a good product in a short time period with a simple easy-to-use engine than it is with one of the premiere engines with all the bells and whistles."

www.viciousengine.com

< CODING >

GETTING ON THE FAST-TRACK TO MALI

ARM's new mobile GPU is designed to crack a billion device market by 2010…

Mali-400 MP

Price: Not applicable
Company: ARM
www: www.arm.com

IF THERE'S ONE FEATURE of gaming hardware that's hard to underestimate, it's the transition between 2D and 3D graphics. Which you do remember – the awesome 2D performance of arcade beat 'em ups on the Sega Saturn or *WipEout* on the PlayStation?

Of course, there was a games industry before the introduction of PlayStation and Voodoo PC graphics cards, but the explosive growth since has relied upon the standardisation of cheap 3D hardware acceleration.

And that's exactly what Chris Porthouse, ARM's senior product manager for multimedia, predicts is about to happen when it comes to mobile gaming.

'The old mobile gaming revolution again,' you may well be thinking to yourself, but while there have been plenty of false dawns, the industry is now measured in $1 billion of annual sales, while the first wave of 3D hardware accelerated devices, such as the Nokia N95 and Apple iPhone, are selling ten of millions of units per year.

"There are a number of things happening such as higher screen resolution, touchscreens, high quality user interfaces, even micro-projectors being built into phones," explains Porthouse. "This means all the major mobile OEMs are putting hardware acceleration at the heart of all their multimedia strategies. By 2010, this is going to be an annual billion device market."

This is why ARM, best known for licensing its CPU designs, is positioning itself to enter the mobile graphics processor market in a big way. Its wheels have been turning in this direction for a number of years now, ever since it purchased Norwegian outfit Falanx for its Mali GPU architecture in 2006.

The entry level Mali-55 is currently shipping in phones, while the mid-range Mali-200 will be available in commercial devices by the start of 2009. It's the flagship Mali-400 MP (due in 2010) that's getting Porthouse excited, though.

"It contains a vertex processor that's capable of 30 million triangles/second and up to four parallel fragment processors that allow us to do over one billion pixels/second," he says.

What's particularly important about this power however is how its shaped for mobile devices, with one key feature being its low power consumption. "Power is dependent on memory bandwidth," he says. "That's why we have an L2 cache to reduce memory bandwidth. The way we do our tile-based rendering is pretty unique too, and this maintains high performance while reducing memory bandwidth. Compared to our competitors, we use up to 40 percent less power."

Indeed, one of the neat features of the Mali-400 MP architecture is that OEMs can choose how many fragment processors they want, with ARM's driver abstracting the details from developers, who can write software for what's effectively a platform.

The current market for 3D-accelerated mobile handsets consists of tens of millions of devices per year. By 2010, this could have risen 100 fold

Interestingly, graphical performance almost scales linearly depending on how many cores are included, and all configurations get 4x full screen anti-aliasing for free.

But as Porthouse also argues, the success of the market won't just be about hardware, but about tools too.

"We provide some tools, but we see ourselves enabling a market for tools developers as well," he says. "We don't want to be the only people supplying tools for Mali so we are working with a number of other developers to make sure their tools can take advantage of the architecture, because the bottom line is if you don't have developers developing for your GPUs, then your GPUs won't be successful."

www.arm.com

AUDIOROUNDUP

Big Audio Dy

Game audio production is maturing, with the solid foundation of low level engines being made more flexible and efficient thanks to improving tools, finds **Jon Jordan**…

Perhaps more than any other area of middleware, the basic flow of game audio technology remains the balance between low level performance and the production toolset that surrounds it. Certainly, over the years, there have been many over-complicated solutions, offering all-singing and dancing packages that may have enabled some neat tricks, but only at the expense of the fundamentals.

Of course, expense has always been the other defining factor, and it's significant to note that of the three main audio technologies currently available for developers, their level of pricing is around the $10,000 mark that has proved to be sweet spot whereby componentised middleware packages (minimum functionality withstanding) move from being an option to being a no-brainer.

Still, audio technology is also influenced by the wider market trends, and for that reason, with much next-gen functionality pinned down, there is a strong movement to integrate with the complete engine solutions that are becoming dominant in terms of providing game developers with a technical standard and tool developers with a commercial channel. Wwise, for example, is strongly tied to the Gamebryo engine, while FMOD is already integrated into Crytek's CryEngine 2 and is currently being similarly worked into Unreal Engine 3 and Gamebryo.

AUDIOKINETIC

TECHNOLOGY
Wwise 2008.2

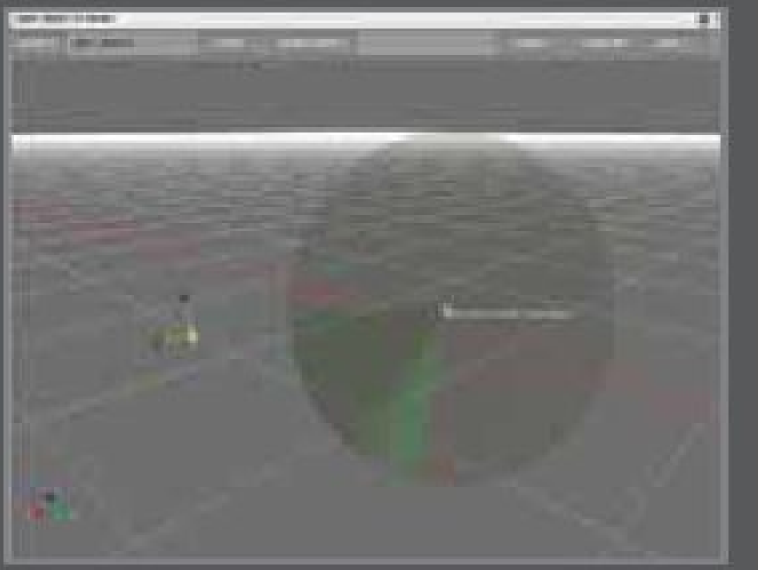
CLIENTS
Activision, BioWare, Ensemble Studios, Realtime Worlds, Silicon Knights

SUPPORTED PLATFORMS
PC, PlayStation 3, Wii, Xbox 360

INTEGRATION WITH
3ds Max, Gamebryo Elements, Maya, Perforce

PRICE
$15k first platform, $7,500 additionally

CONTACT
+01 514 499 9100



The latest version of Wwise includes the Motion controller option

www.audiokinetic.com

Giving sound engineers more flexibility to create better game audio is the main thrust behind Canadian company Audiokinetic's self-styled audio pipeline solution Wwise. It's designed to enable you to quickly prototype ideas before game integration, while handling cross-platform issues and providing profiling in terms of metrics such as voice information and real-time mixing. Wwise 2008.2 also includes the new Wwise Motion package for designing controller rumble.

FIRELIGHT

TECHNOLOGY
FMOD Ex v4.16

CLIENTS
Activision, Blizzard, Crytek, Disney, EA, Microsoft, Midway, THQ, Vivendi

SUPPORTED PLATFORMS
PC (Win, Mac, Linux), PlayStation 3, PSP, Wii, Xbox 360

INTEGRATION WITH
CryEngine (Unreal 3 & Gamebryo soon)

PRICE
$6K first platform, $3,000 additionally

CONTACT
sales@fmod.org

One of the focuses for FMOD is the GUI

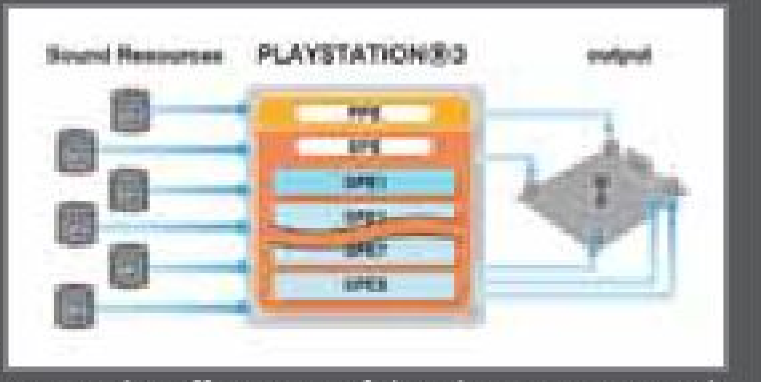
www.fmod.org

Accessed via the flexible sound authoring tool FMOD Designer, Firelight's low level FMOD Ex audio engine offers support for 3D sounds, virtual voices, CPU-optimised streaming and a real-time DSP software engine across multiple platforms. The team's current focus of development is redesigning the user interface to improve the workflow, especially in terms of event previewing, and more interactive music features are also being added.

namite

CRI

TECHNOLOGY
CRI Audio
CLIENTS
Available on request
SUPPORTED PLATFORMS
PC (Win), PlayStation 3, Wii, Xbox 360
INTEGRATION WITH
None
PRICE
Free for PC, otherwise available on request
CONTACT
+01 415 614 4050



CRI Audio offers powerful audio streaming and compression features

www.cri-mw.co.jp/index_e.htm

Built around a software synthesiser, CRI Audio is a cross-platform audio solution that can simultaneously process around 100 sounds or voices on a single Xbox 360 core or via the PlayStation 3's SPUs, also utilising hardware acceleration on the Wii. Another element is the Advanced Interactive Sound and Active Controller, which lets you to create dynamic sounds. The package also uses CRI's ADX streaming technology to enable you to stream large amounts of data.

AUDIO FACTORY

TECHNOLOGY
TBA
CLIENTS
TBA
SUPPORTED PLATFORMS
PC
INTEGRATION WITH
TBA
PRICE
TBA
CONTACT
philip@audiofactorysound.com

www.audiofactorysound.com

One of the most novel approaches to audio for years is gestating in the shape of Israeli company Audio Factory's forthcoming technology. The new technology startup is working on a system based on computing the interactions of the environmental sound sources from the data available from a game's graphics and physics engine. It's still early days, but the system will consist of an SDK for developers and an audio hardware component for gamers.

Inventory

by David Jefferies
Black Rock Studio

WHEN A DEVELOPER IS developing new IP, most publishers follow similar procedures. Firstly, the paper concept is green lit, this then leads into a pre-production period during which the developer tries to prove the gameplay and the tools. The result of this is a first playable milestone consisting of a single level with representative graphics and proven gameplay.

Once the first playable is approved the project moves into mass production where the team is grown to anything up to 150 developers who immediately start producing the assets required for the final game.

This creates a chicken and egg situation because as soon as you hit mass production your tools have to be locked down, targeted and stable. However, it's likely that in translating the paper concept to a playable game the team has had to make large changes to the gameplay to make it fun.

And so here's the problem: the tools have been developed to make the first playable, the first playable needs major adjustments to make it fun and so the tools become obsolete. The execs are happy because they've got a great first playable and the team is unhappy because it knows it doesn't have the right tools for mass production.

This is analogous to inventory in lean production, the idea being that the more stock you've manufactured (in this case, tools) the more stock will be made redundant if a defect is found in the manufacturing process (in this case, the game design being flawed).

The game design document (GDD) is another great example of inventory. Even these days some publishers demand a 200 page document detailing the minutiae of game design before the project is green lit. As soon as the project starts and a defect is found then the whole document can become redundant.

Once the problem of inventory has been identified there are ways of combating it. We chose to build our first playable right at the beginning of pre-production before we'd developed our tools. This wasn't a rough prototype – it was a completely functioning level of the game – but built using convoluted export procedures and entire tools being replaced by editing XML documents.

This means we can spend the rest of pre-production building the tools for mass production. Changes to the game design and tools will still occur, and are desirable, but now that the basic premise of the game is proven to be fun we're confident the game won't fundamentally change.

In the case of the GDD it's clear that each feature should only be documented just in time for it to be implemented. You may or may not have a choice in this matter depending on how sympathetic your publisher is.
www.blackrockstudio.com

KEYRELEASE

PRODUCT: VENUS Blue
COMPANY: Testronic Labs
PRICE: Available on request
CONTACT: venusblue@testroniclabs.com
W: venus.etri.re.kr

Bright rising Eastern star

From the land of the online game comes a solution for online behaviour and bandwidth testing, **Jon Jordan** discovers…

WHEN IT COMES TO networking middleware, there's a reasonable choice for certain tools; think pure networking code, console-friendly lobby and match-making, and even complete MMO development environments. Despite various attempts over the years, though, no one's managed to pin down the messy and expensive gap that yawns in between running a test case scenario with a dozen in-house players and opening up your not-quite-finished baby to the flickering bandwidth and bad manners of thousands of players/testers.

Until now: at least, that's what Neil Goodall, CEO of UK quality assurance outfit Testronic Labs reckons. But he perhaps would think that, having (almost) Victor Kiam-style liked it so much he went out and bought the other company.

"VENUS Blue has real benefits for our customers. It not only offers the most intensive and thorough testing service available for online games, but also provides major cost savings as very little human participation is required," Goodall reckons of the technology developed by the Korean non-profit government-funded research organisation, ETRI, for which Testronic has the exclusive rights in North America, Europe and Japan.

Of course, part of the reason few Western companies have attacked the market includes the barriers to entry for a technology that sits somewhere between client and server code, while also having to emulate network and player behaviour. Frankly, it's always been a bit of a no-man's land. Also, until recently, there's been the lack of a market, with the relatively few Western-developed MMOs being treated as expensive special cases.

In Korea, however, the sheer volume of MMOGs meant that VENUS Blue, which took four years to develop and is actually an acronym for Virtual Environment Network User Simulation, has been used to test over 20 games including HanbitSoft's Tantra Online and JC Entertainment's FreeStyle Street Basketball.

In terms of how it works, VENUS Blue is perhaps best described as an umbrella technology that consists of various modules: VENUS Studio, VENUS Agent, VENUS Client SDK, VENUS Monitor, and VENUS Analysis (*see boxout for more details*). What it basically boils down to is providing you with the ability to generate virtual connections which you can use to test your online game – whether client-server or peer-to-peer – plus various analysis tools.

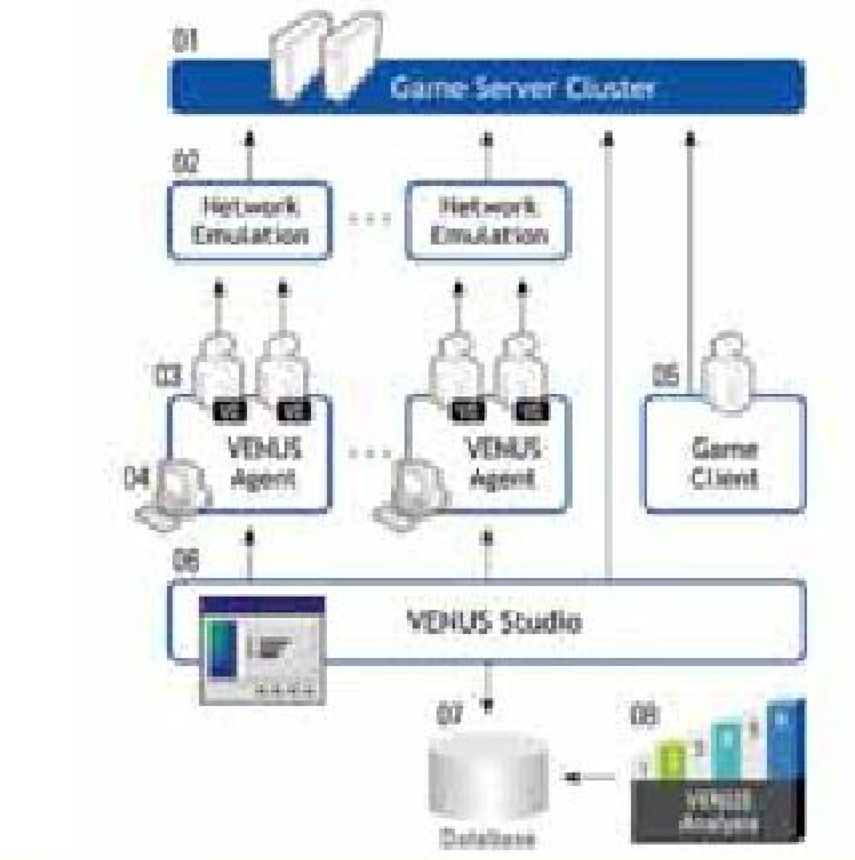
> ***"You can have virtual players fighting virtual monsters, communicating between themselves…"***
> ***Peter Schouwenaars, Testronic***

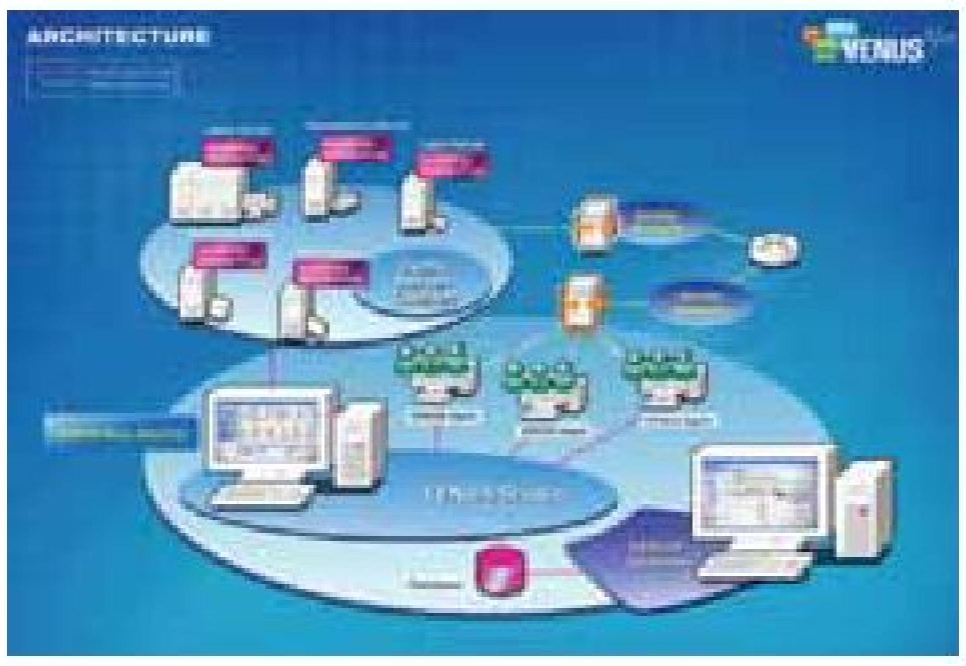
"It's very scalable because of its hierarchical architecture, while the core engine can generate a large quantity of network connections to manage the huge scale of virtual players," explains Peter Schouwenaars, Testronic's account manager for VENUS Blue. "The more time developers spend working with the tool, the more things they can tweak. VENUS Blue doesn't just emulate active connections. You can have virtual players fighting the monsters, organising themselves as guilds and communicating between themselves. You can even get virtual players to play with real players."

More prosaically, another key feature of the system is it can benchmark the infrastructure you're running your online game on: indeed, ETRI and Intel have an agreement to further research this aspect of the technology.

"It will spot the bottlenecks and analyse the overall performance of your game servers," Schouwenaars says. "You'll still need to do things like beta test with real players of course, but using VENUS Blue enables you to easily emulate a variety of testing scenarios within a much shorter period of time and with far less strain on human resources, saving time and money."

And those are factors than even those dealing with the requisite deep pockets and long lead times of MMO production will be happy to get some help with.





Above left: VENUS Blue has been used to test over 20 Korean games including JC Entertainment's *FreeStyle Street Basketball*.

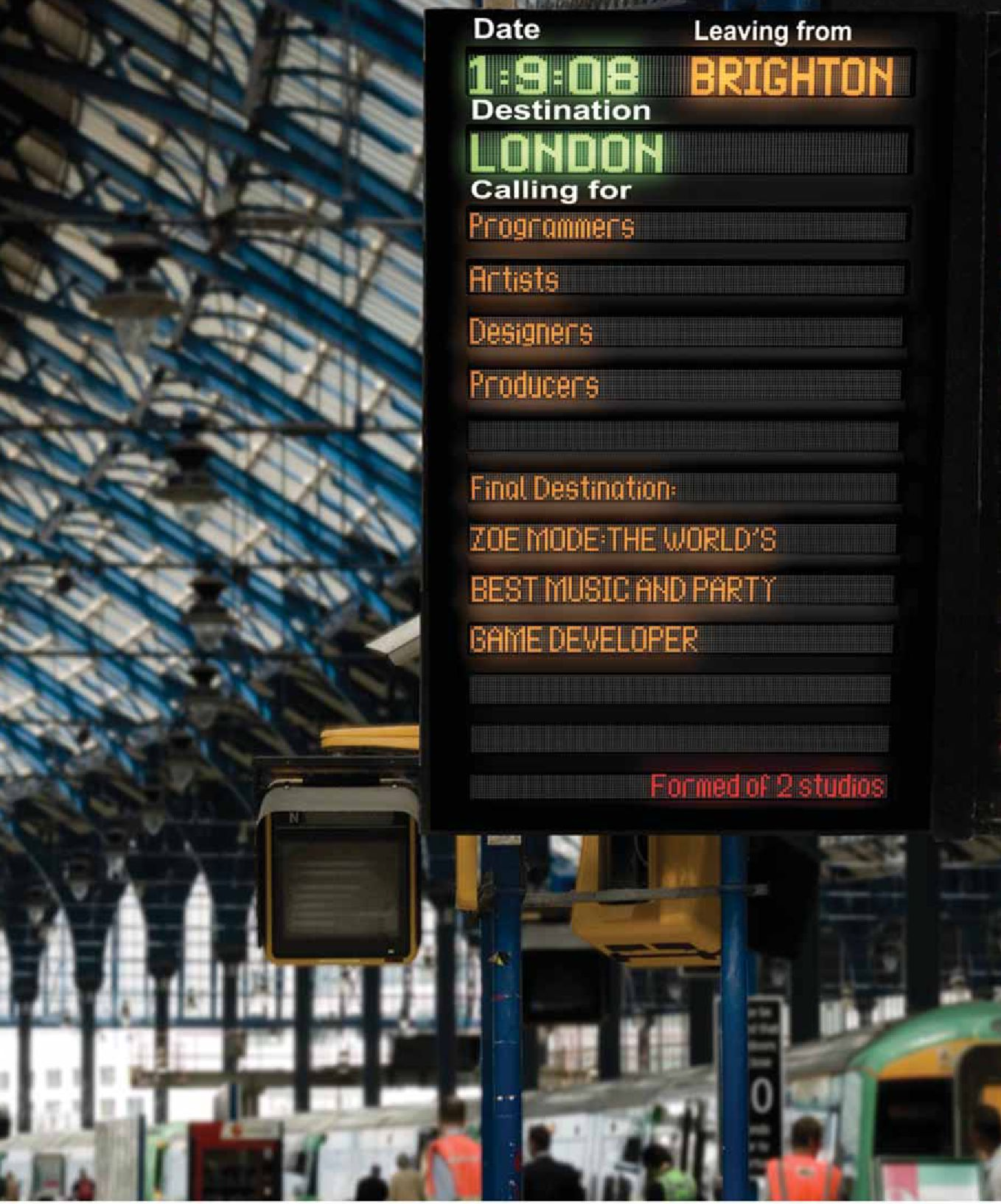
Middle: A simpler viewpoint is shown via this diagram, which shows the system interactions with the game server.

Bottom: The VENUS Blue architecture is centred around the Studio component, which controls the Agents playing the game and feeds information back into the database for analysis.

Putting VENUS together

VENUS Blue consists of five main components:

- VENUS Studio is the main application, which manages the entire testing simulation. It controls a number of agents by sending actions for virtual clients. It also has a real-time monitor program to watch the server systems' performance in terms of metrics such as CPU, memory, network usage and response time.
- VENUS Agent is a middleware program to be installed in PC or server systems to generate virtual players. It communicates with VENUS Studio and lets testers easily create large number of VENUS Client applications. It also contains a network emulator to simulate a variety of network environments such as packet loss, packet delay and duplication.
- VENUS Client SDK is a set of C++ APIs which are integrated into your game code and creates the loads. The integration process is reckoned to take anywhere between a couple of days to a week, depending on the depth of integration required.
- VENUS Monitor collects real-time data from the servers and sends it back to VENUS Studio. All the data received from VENUS Monitor is stored in the database.
- VENUS Analysis is an application to analyse the simulation results in the database. It graphically displays the data using graphs and charts, and hence summarises the overall test results.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08

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EDGE
gamesradar.com
MCV
develop
ME
casualgaming.biz

Following procedure

Getting a machine to do your work for you with procedurally-generated content? Sounds too good to be true - but, as **Ed Fear** finds out, it might be a better deal for players, too…

Will Wright's Spore (pictured) uses both procedural content and characters that are user-generated

There's certainly some buzz around the word 'procedural' of late – although it'd be handy if the word had a solid definition. Literally referring to something that follows a procedure, in the game world it generally translates to the programmatic generation of content based on parameters or grammars, and sometimes a random factor. Some people consider physics engines to be a procedural system, for example, given that they calculate reactions (content) based on collision volumes and forces (parameters) – in this case with no random factor. Some confusion exists as to where 'procedural' begins and 'random' ends, but it makes sense to view the differential as the grammars and parameters as distinguishing procedural from purely random.

Semantic issues aside, procedural content has a long history in gaming, going back to games such as *Elite*, which used mathematical functions to generate a universe comprised of thousands of planets and star systems, and Geoff Crammond's *The Sentinel*, which used a level-generation system to squeeze 10,000 landscapes in 64k. But it's only recently that procedural content has started to really find its feet within the industry, with new procedurally-focused middleware companies sprouting up every few months, in some way aiming to facilitate the process of building games.

BRUSH WITH SUCCESS

"Basically, procedural content generation allow news opportunities – it increases creative power. It's another word for a tool," says Lionel Barret de Nazaris, founder of Gamr7.

"Photoshop provides us with a huge array of tools to work with – brushes, layers and selections. We don't think of these as procedural content generation, but in fact, that's exactly what they are. When we paint with a brush, we're modifying many pixels at once using a procedure defined by the program code and a small piece of content; in this case, the data for the brush. Through many operations, an artist can create a masterpiece that would be impossible to generate entirely using procedural techniques. This would be technically feasible to do one pixel at a time, but by providing a higher level of abstraction – brushes – we reduce the difficulty curve of reaching that level of mastery immensely.

"As such, it's important to think of your procedural technique as a way to augment your creative process, either by creating a useful and understandable abstraction in the way a brush does for an artist – or by replacing large sections of 'busy work' with a procedure that fills out that data."

> **"With the maturity of digital distribution, both on PCs and consoles, the size of games is under increased scrutiny…"**

There are a number of reasons why procedural content has become a buzzword. With the maturity of digital distribution, both on PCs and consoles, the size of games is under increased scrutiny – especially with tight limits set for Xbox Live Arcade and, in particular, WiiWare. Despite this much smaller headroom, gamers still expect high-definition content, which can be delivered if textures are generated procedurally.

But it's not just situations with restrictions that need smaller files, explains Allegorithmic's Sebastien Deguy – the burgeoning free-to-play game market is also highly dependant on download size. "Textures represent 30 to 70 per cent – sometimes more – of a game's whole client size," he says. "For free-to-play games there is a direct relationship between the size of the client and the revenues the game will generate, and so there's no reason not to seriously consider generating these textures procedurally."

But size isn't the only thing procedural content has going for it: given that the time of creating assets is increasing massively, there's significant time savings to be found by automating aspects of the production pipeline – and therefore reducing the number of artists required. If that sounds slightly far fetched, a look in NaturalMotion's direction might be prudent. Itself a procedural middleware firm – its Euphoria dynamic character animation system debuted to much success in Rockstar North's *Grand Theft Auto IV*, and is set for another outing in LucasArts' big-budget *Star Wars: The Force Unleashed* – it has also set up a small team to develop *Backbreaker*, an American football game, using the Euphoria technology to sustain a next-gen team that often sits at under ten staff.

"There are definitely cost savings in using procedural content," assures NaturalMotion's Torsten Reil. "Moving asset production onto the hardware's processors saves time and money, enabling small teams to create innovate titles." But one thing that holds back this application is the loss of control that some feel comes with automating part of the process. The key to solving this, says Reil, "is to have creative tools that let artists determine the look and feel of procedural content, as well as game designers who are prepared to let procedural content into the game.

"I would argue that procedural content is only as good as the artists who authored it. We have a lot of experience creating interactive character behaviors, and at the end of the day, it's the input from animators that creates the style and feel of a character. That, of course, is the way it should be – otherwise everything would start to look similar and vanilla."

Pascal Mueller, CEO of Procedural – another company working on the dynamic creation of cities – argues that by automating part of the pipeline those artists you already have can focus on the more creative and artistic aspects of their work.

"With manual solutions, a large portion of the modelling process consists of tedious and repetitive tasks such as aligning polygon meshes and setting up textures. Now, with a vast array of procedural products available, the time saved can be used to focus on the design itself and to create more complex and visually enriched models," he says.

SPEEDY CONSOLEZ

The final main factor in procedural's bloom is the power that our current-generation consoles has opened the floodgates for doing some procedural generation in real-time. Although currently limited in applications, there are a few working in this space: once again NaturalMotion's Euphoria is capable of generating animations at run-time based on its Dynamic Motion Synthesis technology, once limited to offline rendering. Similarly, Allegorithmic's ProFX procedural texturing tech, once limited to generation at game load-time, is also to become a run-time process in its new Substance offering - and this will lead to unparalleled uniqueness in game experiences. "You can imagine animated textures, going for example from a clean to a dirty state, from dry to wet, evolving with the mood of the scene, reflecting a change in the world you're traveling through," says Deguy.

"You are also able to actually interact in real-time with the very textures; a sword impact on a shield will lead to a trace in the shield's texture depending on the angle of attack, the velocity of the hit, the type of metal of the sword, the color and shape of the sword, the material properties of the shield, its age and resistance, etc. This truly brings a new degree of realism and richness to the game world."

One of the many applications for procedural content that the industry predicts will happen once the technology matures is that of virtual humans and, in particular, their dynamic responses to the player. NaturalMotion's Euphoria already simulates physical reactions of non-player characters to being pushed, complete with the intelligence to, say, put their hands out to steady their fall – but some believe the future will see far wider-reaching applications of procedural techniques in pursuit of the 'digital actor'.

NaturalMotion has built an internal studio off the back of its Euphora, an engine which procedurally generates animation – its first game is Backbreaker (pictured)

Deguy elaborates: "Maybe a great domain of application of procedural techniques will be for the modeling of natural reactions for virtual characters. Everything that is related to the simulation of a virtual human will indeed certainly have a lot to do with adaptative, parametric approaches, as it is simply impossible to record the incredibly complex and rich pallet of expressions of a human being. In that respect, procedural content will in my opinion tremendously help crossing the Uncanny Valley."

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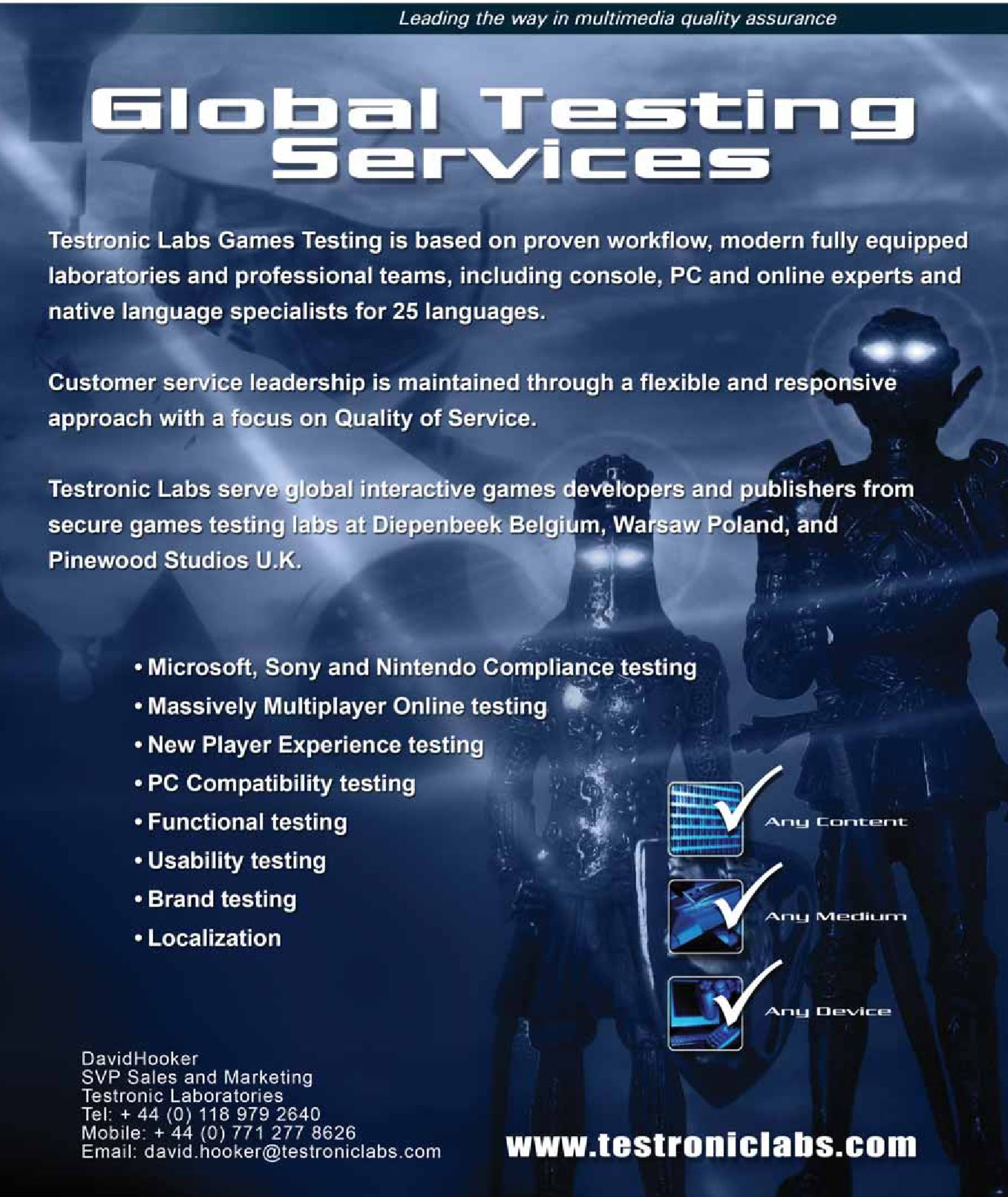

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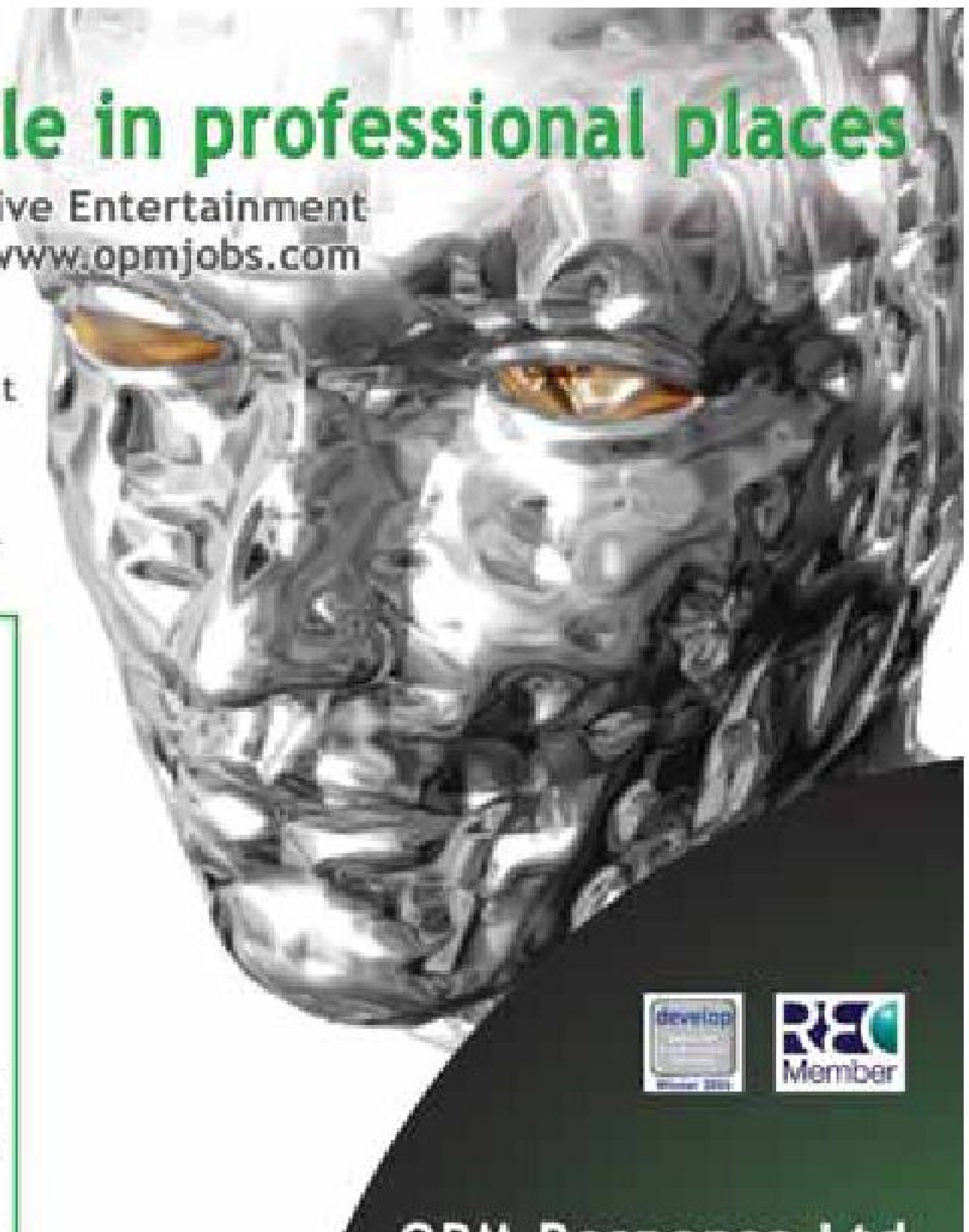

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The successful candidate in this role will have a solid understanding of the cause of network lag / latency / bandwidth issues and possible ways to minimise their effects in a multiplayer game. This candidate must also have experience of dealing with the following: Network sockets and TCP / UDP protocols, Reliable packet handling over UDP, Xbox Live / PlayStation Network (PSN), SQL / ADO database programming.

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HEARDABOUT

Tracking signals

John Broomhall on why you should book at seat for the audio track at this month's Develop conference…

Sound design isn't a science – it's an artform." This striking statement from Greg O'Connor-Read of music4games.net perfectly encapsulates the overall theme of the day-long Audio Track at this year's Develop conference, now firmly established as Europe's premier annual game audio gathering.

The 'Inspirational Sound Design' thread running through the day is borne of a firm conviction by those who have shaped this year's content that our focus should rightly be on creativity rather than technology. We have computing horsepower, and increasingly we have the tools to harness it – but what will we do with it?

One of this year's speakers, Adele Cutting (senior audio director, EA) remarked to me some time ago: "So we can have all the sound we want? Now we have to go and figure what to leave out."

Historically, game engines have pushed us towards a dense, literal description of the world, with carefully placed sound emitters in 3D geometry spaces sporting scientifically accurate acoustic reflections and reverberation. Realism has been the watchword and we've enjoyed both the challenge and joy of bringing virtual worlds to life.

But what of the use of subjectively chosen sound treatments purely to enhance and underscore drama and narrative? Music is often left to do the job – sometimes beleaguered by relatively clumsy attempts to shoe-horn in the functional grammar of film music.

> ***"The audio track will feature some of the most respected practioners explaining how they are bringing fresh pioneering thinking to forthcoming games…"***

Meanwhile, how many games have fully explored the immensely potent force of sound that tells a story, provides exposition and characterisation, leads navigation, drives primal emotional responses (perhaps even in juxtaposition to picture) – sound that works beyond the literal using metaphor and suggestion?

Of course, our work is inextricably bound up with technological considerations and that cannot be ignored. Nevertheless, it's right that this year's conference should focus on the power of ideas when it comes to audio. The future craft and artistry of sound design for videogames is ours for the taking.

We have much to learn from each other and the audio track will feature some of our most respected practitioners explaining what gets their boats floated and how they are bringing fresh and, in some cases, pioneering thinking and approaches to their forthcoming titles.

What's more, in a first for the Develop conference, we'll be welcoming some of our respected peers from movies to discuss how 80 years of film sound might inform video games further as we now struggle less with hardware constraints and more with the challenge of consumer expectations driven largely by their movie soundtrack experiences. The Audio Track will start a dialogue as we discuss the future of sound with a keynote panel of audio luminaries from both games and movies.

The planned programme features DICE's head of audio David Mollerstedt, Sony's audio & video manager Dan Bardino, Foley editor/sound designer Alex Joseph, sound re-recording mixer Tom Johnson, Dolby's director of interactive voice technology, Paul Boustead, SCEE Cambridge's audio manager Garry Taylor, Zoe Mode's audio director Ciaran Walsh, and a rare opportunity to hear Rare's entire audio team discuss their ground-breaking work in this year's 'Welcome To Our World' session – a conference coup. The list goes on.

If that's not enough, with the bulk of Europe's videogames industry represented at this year's conference, there will be networking opportunities a-plenty. If you're involved with sound, music and dialogue for games, or would like to be, the Develop conference audio track really is the only place to be on July 31st.

Come and be inspired.

John Broomhall is an independent audio director, consultant and content provider
develop@johnbroomhall.co.uk
www.johnbroomhall.co.uk

EPIC BUYS CHAIR ENTERTAINMENT, CREATOR OF XBLA GAME OF THE YEAR UNDERTOW

Epic Games has acquired Chair Entertainment, the Provo, Utah-based studio behind the underwater shooter *Undertow, Official Xbox Magazine's* 2007 Xbox Live Arcade Game of the Year, which is powered by Unreal Engine 3.

While Chair's team is small in size, its agility, discipline and strategic planning have enabled the studio to efficiently produce high-quality, downloadable games using the Unreal Engine; for example, Undertow shipped with a footprint of only 48MB.

Epic plans to leverage Chair's expertise to better serve the downloadable and casual game market going forward. Chair has been developing an original, cross-media property called *Empire*, a saga about a second, near-future American Civil War.

Early in the project, co-founders Donald and Geremy Mustard (*pictured above*) enlisted the help of renowned author Orson Scott Card, with whom they and other Chair core team members had previously collaborated on *Advent Rising* for Xbox and PC.

Empire began as a game with an in-house written story, and in 2006, Card expanded the narrative into a *New York Times* best-selling novel. Warner Bros. and producer Joel Silver have optioned the film rights.

Chair also owns the licence to create the video game adaptation of Card's classic 1985 science fiction novel, *Ender's Game*.

AVALON STYLE LICENCES UNREAL ENGINE 3 FOR OFF-ROAD DRIVING GAME

Avalon Style Entertainment, one of Russia's leading developers of interactive entertainment, has licensed Unreal Engine 3 to develop the latest installment in its popular *4x4 Off Road* off-road driving simulation series for PC, Xbox 360 and PlayStation 3.

4x4 Off Road III (international title: *Off Road Drive*), will be published by1C Company.

Avalon Style is one of the first Russian game studios to license Unreal Engine 3 for cross-platform computer and video game development.

While previous releases in its *4x4 Off Road* racing franchise utilised the company's proprietary racing technology, the development team was convinced to license Unreal Engine 3 after first-hand experience with its comprehensive infrastructure and tools.

"Unreal Engine 3 is at the forefront of multiplatform game development," said Vyacheslav Gordeyev, CEO of Avalon Style.

"The technology has been successfully used in many critically acclaimed titles, and we feel fully armed to make the first off-road driving simulator on Unreal Engine 3 thanks to built-in vehicle support, a powerful PhysX system, and many other leading edge features."

SEGA SCORES UNREAL ENGINE 3 LICENCE FOR NEW GAME

Sega of America has extended its relationship with Epic by signing a new Unreal Engine 3 licensing deal for an unannounced, cross-platform game.

Sega entered into its original licensing agreement to create multiple titles with Unreal Engine 3 in May 2007.

"The great capabilities of Unreal Engine 3 make it possible for our developers to deliver incredible gaming experiences," said Dave Cobb, vice president of development, Sega of America.

Cobb continued, "Unreal Engine 3 provides superior power and flexibility enabling Sega to bring original and exciting next-generation, multi-platform titles to market."

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Please email:
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To discuss anything raised in this column or general licensing opportunities for Epic Games' *Unreal* engine, contact:
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***Mark Rein** is vice president of Epic Games based in Raleigh, North Carolina. Since 1992 Mark has worked on Epic's licensing and publishing deals, business development, public relations, academic relations, marketing and business operations.*

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Harnessing the power of multiple GPUs

Multi-GPU PCs aren't the future, they're here now – but is your game taking advantage of them properly? Those mythical 100 per cent speed increases are possible, say AMD's **Jon Story** and **Holger Gruen**…

< CODING >

TUTORIAL:
PROGRAMMING FOR MULTIPLE GPUS

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INTRODUCTION

We have seen over the last few years how the CPU has migrated from being a single core device, to the dual, triple and quad core beast that it is today. This change presented developers with a potentially enormous increase in processing power, and also with a software challenge, known as multi-threading. Under the hood the modern GPU is already a massively parallel machine, with hundreds of mini shader cores, and dozens of hardware threads. No one would dispute that the GPU has an enormous amount of processing power to offer, so what is the motivation for systems that come equipped with multiple GPUs?

Recent developments with LCD monitors have upped the bar for the consumer, who can now expect to purchase a 32" widescreen monitor, achieving resolutions up to 2560x1600, for a very reasonable price. In a nutshell, high resolution monitors have entered the mainstream, and this in turn has meant that consumers want to see the games they buy running in full glory at very high resolution with multi-sample anti-aliasing enabled.

It turns out that multiple GPUs can be used to dramatically increase the performance and image quality of games, especially at the higher screen resolutions the consumer has now come to expect. It is now possible to buy an increasing number of systems that can accept not just two or three, but four PCI Express generation two video cards. Recently AMD released the Radeon HD3870 X2, which has two GPUs built on to a single PCB, making it possible to achieve four-way CrossFire with just two boards, as shown in Figure 1.

In addition it is also possible to make use of the integrated graphics processors built into some systems, by combining their performance with a discrete video card – this technology is known as Hybrid CrossFire.

The question is: what does the developer need to do in order to unlock the additional performance available? To answer this question we must first understand how the additional GPU's are used.

> ***"It's now possible to buy systems that accept four PCI Express video cards…"***

Figure 1

ALTERNATE FRAME RENDERING

Currently both AMD and Nvidia support multiple GPUs through their technologies, the former via CrossFire and the latter via SLI. Both of these technologies employ the use of a technique called Alternate Frame Rendering (AFR). We know that a typical game can usually feed the graphics driver with work faster than the GPU can process it. To avoid stalling the CPU, the graphics driver can queue up frames of rendering commands. In the case where the driver detects that multiple GPUs are present in the system, it can farm out the queued frames to the various GPUs.

So if we take the example of a three GPU system, as shown in Figure 2, the driver will place frames into command buffers for the GPUs to process. In this way three frames are computed in parallel, although it should be noted that since the CPU has to generate these frames, frame N will start to get processed by a GPU before frame N+1. It is conceptually important to realize that the GPUs are slightly out of sync with each other. Also it should be apparent that a CPU bottleneck will damage parallel performance scaling in a multi-GPU setup, as it would have the effect of starving the GPUs of work. That said, it is readily possible to achieve a very high level of parallelism, and consequently demonstrable performance gains, as will be seen later in this article.

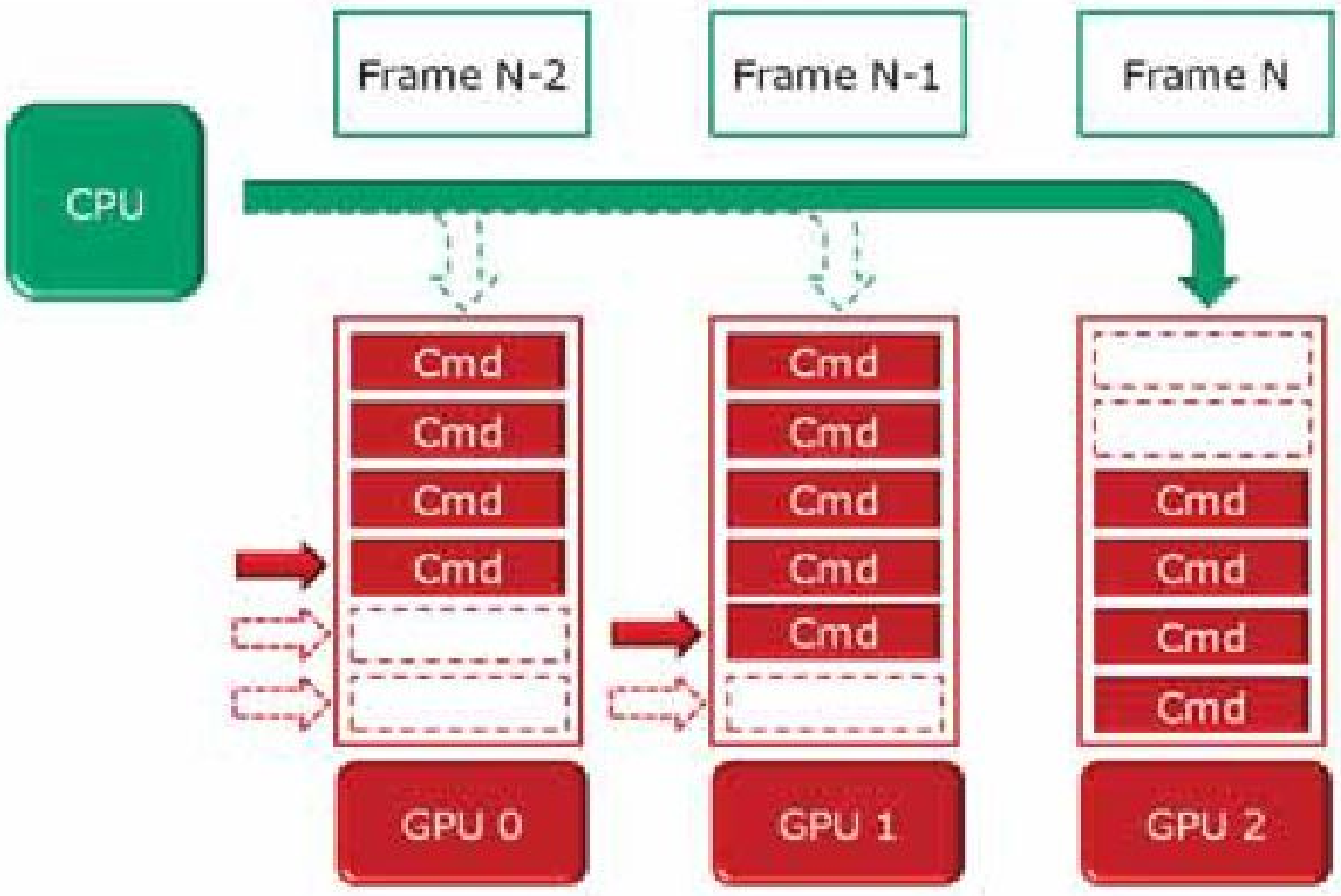


Figure 2

HARDWARE & DRIVER CONSIDERATIONS

Unfortunately, it's possible to seriously reduce the performance gains from multi-GPU systems if the wrong programming methodology is followed. At a basic level developers must ensure that there are no dependencies between frames. This is because current multi-GPU machines do not use a shared memory architecture, and for this reason each GPU has its own copy of all local video memory resources, such as textures, render targets, and geometry. If the driver believes that a GPU is trying to read from a stale copy of a writeable resource, it will initiate a peer-to-peer (P2P) copy of the resource from the GPU it believes has the most up to date copy. In Figure 3 we can see that GPU 1 was about to use a stale copy of Resource A, and consequently the driver had to initiate a P2P copy from GPU 0 to GPU 1. Later in this article we will discuss the heuristics the driver applies to determine whether a resource is stale.

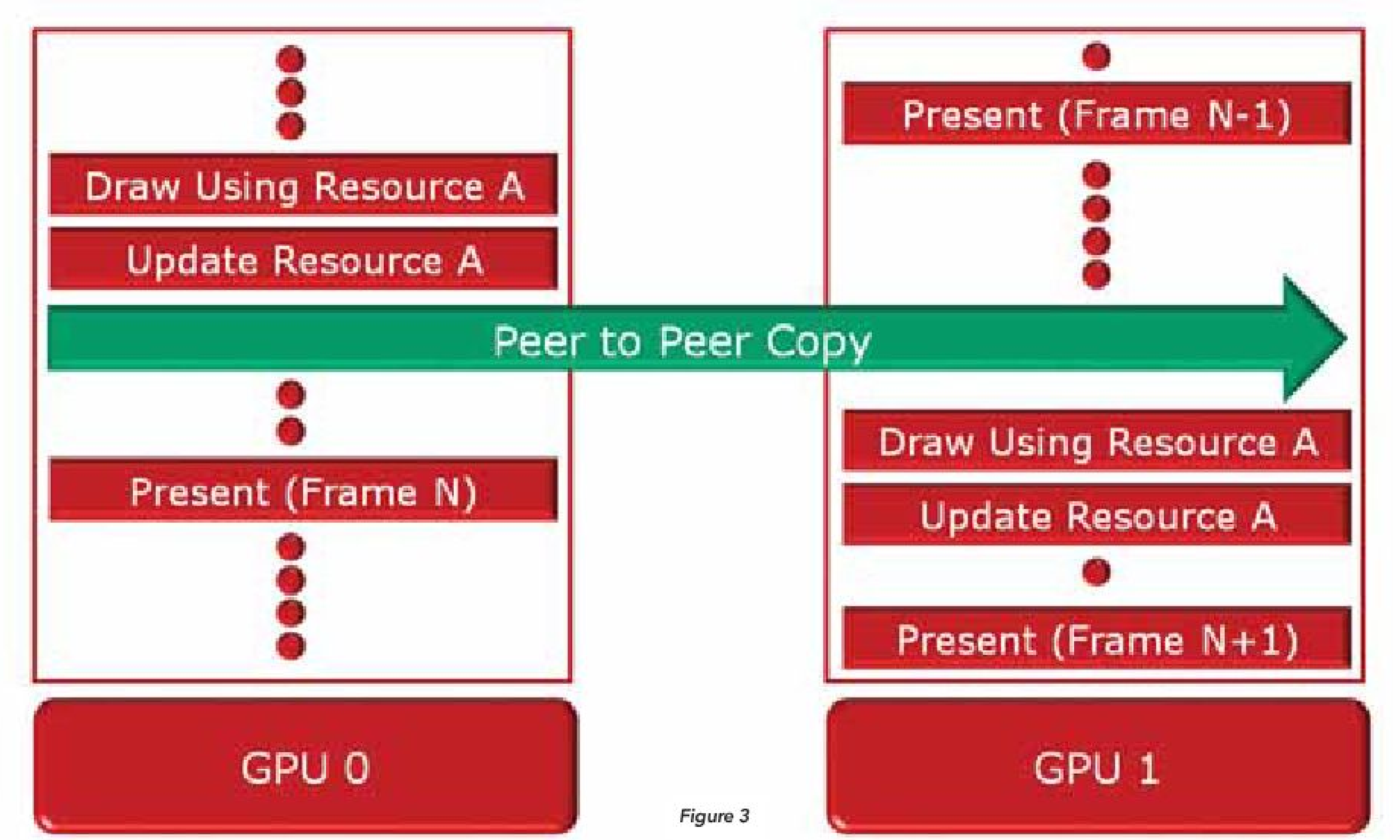


Figure 3

A P2P copy may even involve the CPU on some chipsets, and will always stall all GPUs – therefore serializing the whole process. If this is occurring for many resources, then it is even possible for an application to achieve negative performance scaling – something we can all agree would be an unacceptable impact.

By default the graphics driver is running in "Compatible AFR" mode, which means that it will check for potentially AFR unfriendly behavior, and perform P2P copies when it deems necessary. This mode ensures that applications do not suffer from graphical corruption issues, but clearly incurs a significant overhead.

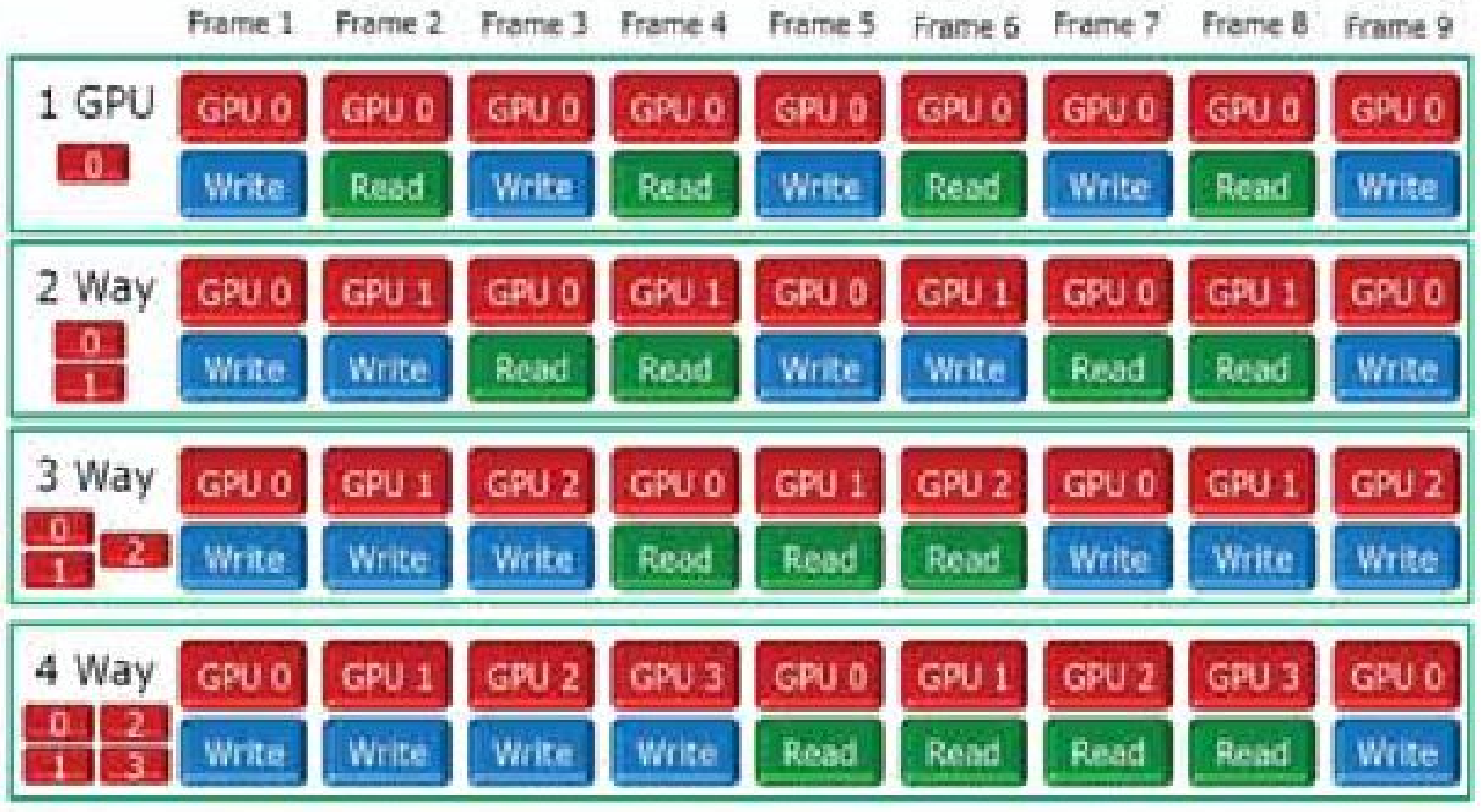
It is also possible to run the driver in 'Application Profile' mode, where it will perform a greatly reduced set of checking. If the driver recognizes the name of an executable, its behavior will be fully guided by the profile for that application. We would encourage developers to talk to their developer relations contacts about how to make their application AFR friendly, and potentially having a profile created for their game.

COMMON PITFALLS & SOLUTIONS

As was previously mentioned, the driver uses heuristics to determine whether a local video memory resource has become stale or not. In fact there are just two rules that it follows:

1. If a resource is updated before it's used within a frame, the driver will assume that the resource is not stale for that GPU.

2. If a resource is updated for N frames in a row, before it's used, where N is the number of GPUs in the system, the driver will assume that each GPU has an up to date copy of the resource.



	Frame 1	Frame 2	Frame 3	Frame 4	Frame 5	Frame 6	Frame 7	Frame 8	Frame 9
1 GPU	GPU 0	GPU 0	GPU 0	GPU 0	GPU 0	GPU 0	GPU 0	GPU 0	GPU 0
0	Write	Read	Write	Read	Write	Read	Write	Read	Write
2 Way	GPU 0	GPU 1	GPU 0	GPU 1	GPU 0	GPU 1	GPU 0	GPU 1	GPU 0
0 1	Write	Write	Read	Read	Write	Write	Read	Read	Write
3 Way	GPU 0	GPU 1	GPU 2	GPU 0	GPU 1	GPU 2	GPU 0	GPU 1	GPU 2
0 1 2	Write	Write	Write	Read	Read	Read	Write	Write	Write
4 Way	GPU 0	GPU 1	GPU 2	GPU 3	GPU 0	GPU 1	GPU 2	GPU 3	GPU 0
0 2 1 3	Write	Write	Write	Write	Read	Read	Read	Read	Write

Figure 4

> ***"It is quite unforgivable to regularly perform locks on static resources, as this is clearly API abuse..."***

Let us consider a common example of how a game may break rule 1. Frame-based Motion Blur relies entirely upon using results produced by previous frames, and thus directly breaks rule 1. The recommendation in this case is to move over to a vector based approach.

Now let us look at how a game might break rule 2. Consider an example where a resource gets updated every few frames, but is used every frame – a classic example of this would be an imposter texture. Now imagine that we have a system equipped with 2 GPUs. Let's follow the sequence of events: GPU 0 will update the resource, and then use it. GPU 1 will also use the resource, however the copy of the resource that GPU 1 has is in fact a stale copy. If this is left as is, it could result in a graphical error. The good news is that the graphics driver will spot this behavior pattern and perform a P2P copy of the texture from GPU 0 to GPU 1. The bad news is that this is very slow indeed, as already discussed. So how do we go about fixing this problem?

We simply apply rule 2, and whenever the imposter texture requires an update we simply repeat the update for N frames in a row, where N is the number of GPUs. This is depicted in Figure 4. In order to apply this rule, we must properly detect the number of GPUs in the system. It may be necessary to create a profile to ensure that P2P copies do not occur.

QUERIES

The use of queries in Direct3D is another key area where it is possible to introduce potentially AFR-unfriendly behavior. If a query has the effect to limit the number of queued frames, this could totally destroy any chance to gain parallelism from AFR. If the application waits indefinitely for the result of a query it will stall the CPU, which in turn starves the GPU command buffers of work – again reducing the chance for parallelism. Also, if the application changes drawing parameters based on the result of a query, this can lead to graphical artifacts. So how do we avoid these problems?

Never limit the number of queued frames. Avoid using queries altogether if you can, and always try and avoid waiting for query results. In the case of occlusion queries it may well be worth considering a CPU based occlusion algorithm – these have gained in popularity.

If you feel you still have to use queries, then do not wait for results. For occlusion queries it makes sense to create additional query objects for each GPU, and collect results no less than N frames after the query was issued, where N is the number of GPUs.

LOCKS / MAPS:

It is a well known issue that performing a Lock() or a Map() on a local video memory resource can have performance implications even in a single GPU scenario. In a multi-GPU setup care is also needed. Performing a lock on the flip chain or any resource flagged as a render target will cause all GPUs to stall until the resource is unlocked. Then a P2P copy will take place to update the other GPUs. All of this badly hurts parallelism, so we strongly advise not to do this.

It is also a very bad idea to lock static textures, vertex or index buffers. Again, this will cause a P2P copy to the other GPUs in the system. It is quite unforgivable to regularly perform locks on static resources, as this is clearly API abuse.

In D3D 10 make use of staging textures, to perform updates to textures. For vertex and index buffers use the dynamic flag at creation, as this allows the driver to select the best memory location for the data.

CALL TO ACTION

Multiple GPUs provide demonstrable performance gains and significantly boost visual quality. Developers should plan from day one to ensure their engine scales on multi-GPU systems. Detect the number of GPUs in the system and regularly check for AFR-unfriendly behavior. Visit **http://ati.amd.com/developer** for white papers and SDK samples that can help you harness the power of multiple GPUs.

***Jon Story** is a member of the European Developer Relations team at AMD GmbH in Munich. The main focus of his work is supporting game developers in Europe to get the best out of AMD's graphics products. **Holger Gruen** ventured into 3D real-time graphics writing fast software rasterizers in 1993. He got into developer relations recently and now works for AMD's graphics products group.*

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Studio News

This month: Develop gets Fear-ful, Razorback staffs up

DEVELOP'S ED BECOMES DEP ED

For a change, *Develop* gets to dominate this section of the mag with some personnel news: our staff writer Ed Fear has been promoted to deputy editor.

"In just 12 months Ed has proven to be an invaluable member of the *Develop* team and his promotion is well-deserved," said Michael French, *Develop*'s editor. "Ed will further support *Develop* as it goes from strength to strength while we continue to provide leading technical and business editorial content to the games development community around the world."

www.developmag.com

RAZORBACK SHEPPARDS IN NEW TALENT

DS developer Razorback has recruited a new artist, Heather Sheppard (*right*). After graduating from the University of Teesside with First Class Honours in Computer Games Art, Heather joins the company with strong skills in both 2D and 3D techniques. "Heather has already impressed us with her artistic talents. She will prove to be a valuable member of the team," said David Leitch, managing director at Razorback.

www.razorback.co.uk

Studio Spotlight

GUSTO

Founded: 2003
Number of Employees: 80

STEPPING OUT OF THE ashes of Silicon Dreams in 2003, it's been a rapid journey for Gusto to get where it is today. Set up by a bunch of friends, Gusto's remit was to stay within the sports sector and capitalise on the experience they'd gained – and the technology they'd developed – at Silicon Dreams.

And remain along those lines it did, getting its first gig on *Urban FreeStyle Soccer* – unusually cross-platform for a brand new studio, thanks to a solid technological base that it acquired from Silicon Dreams. It was next that the studio's big break came, though, in the form of *Championship Manager*. "We were tasked with developing the game for all console formats," says managing director Simon Phillips, "which was an incredible challenge and one we are still proud of – the PSP version is still a favourite game."

Now the company has a second studio in Derby, which will "primarily focus on non-sports titles," largely made of ex-Core staff with an enviable *Tomb Raider* pedigree. But regardless of this growth the company still keeps its feet on the ground, says Phillips. "Ultimately, to get the little sparks of creativity you need to be enjoying your work, which is something we try to encourage. We are a very modern, dynamic, friendly bunch that share ideas and try to be as creative as possible."

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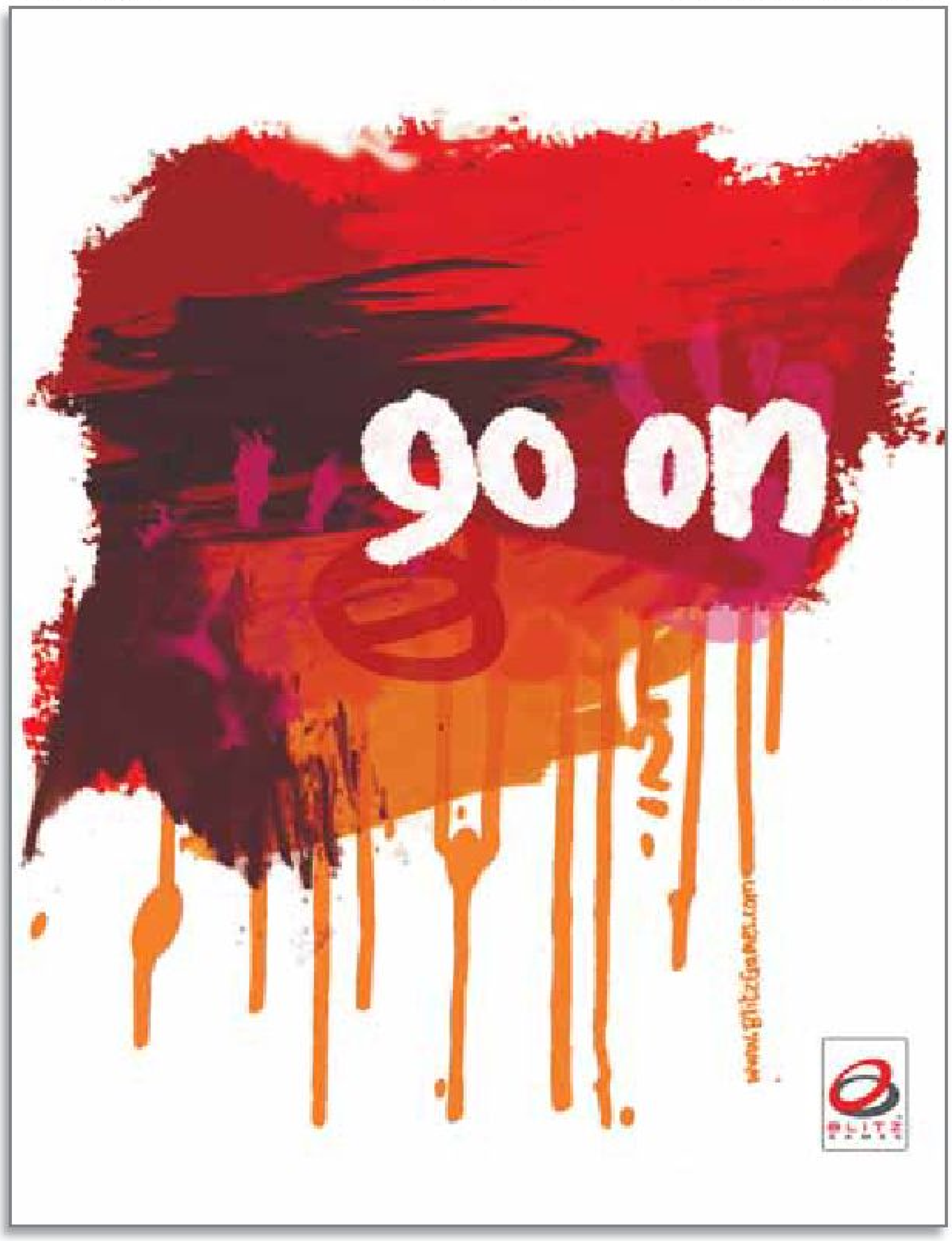

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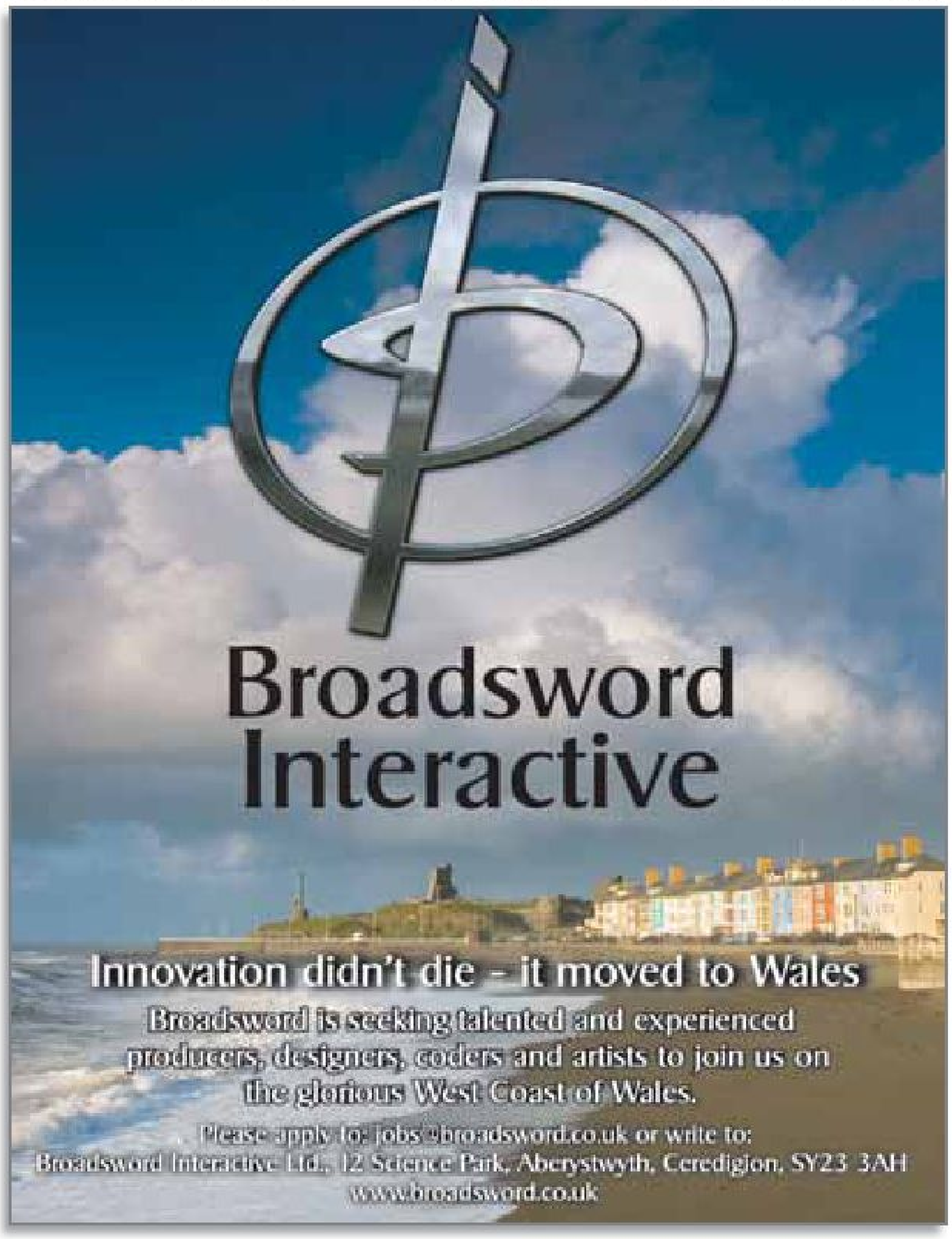
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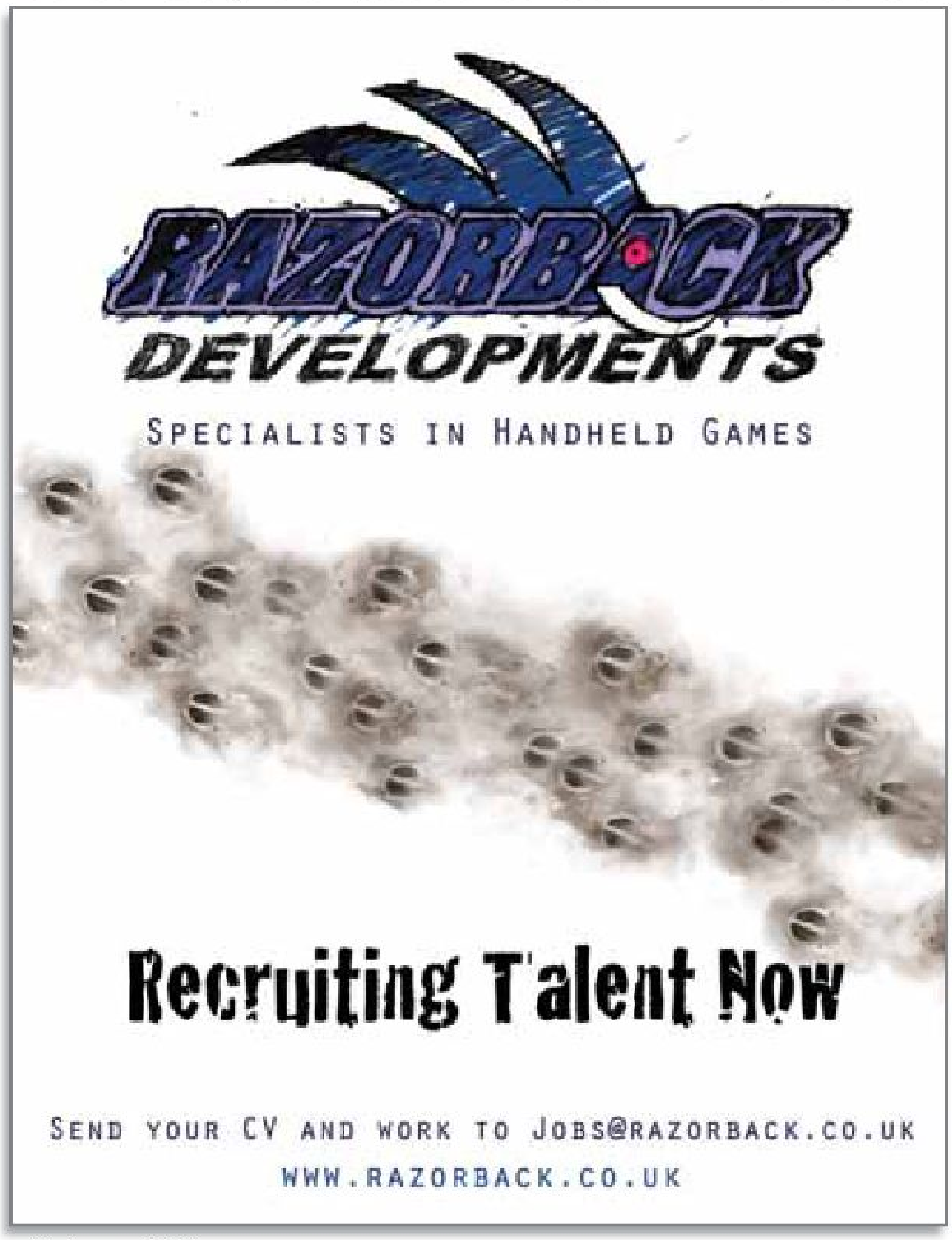

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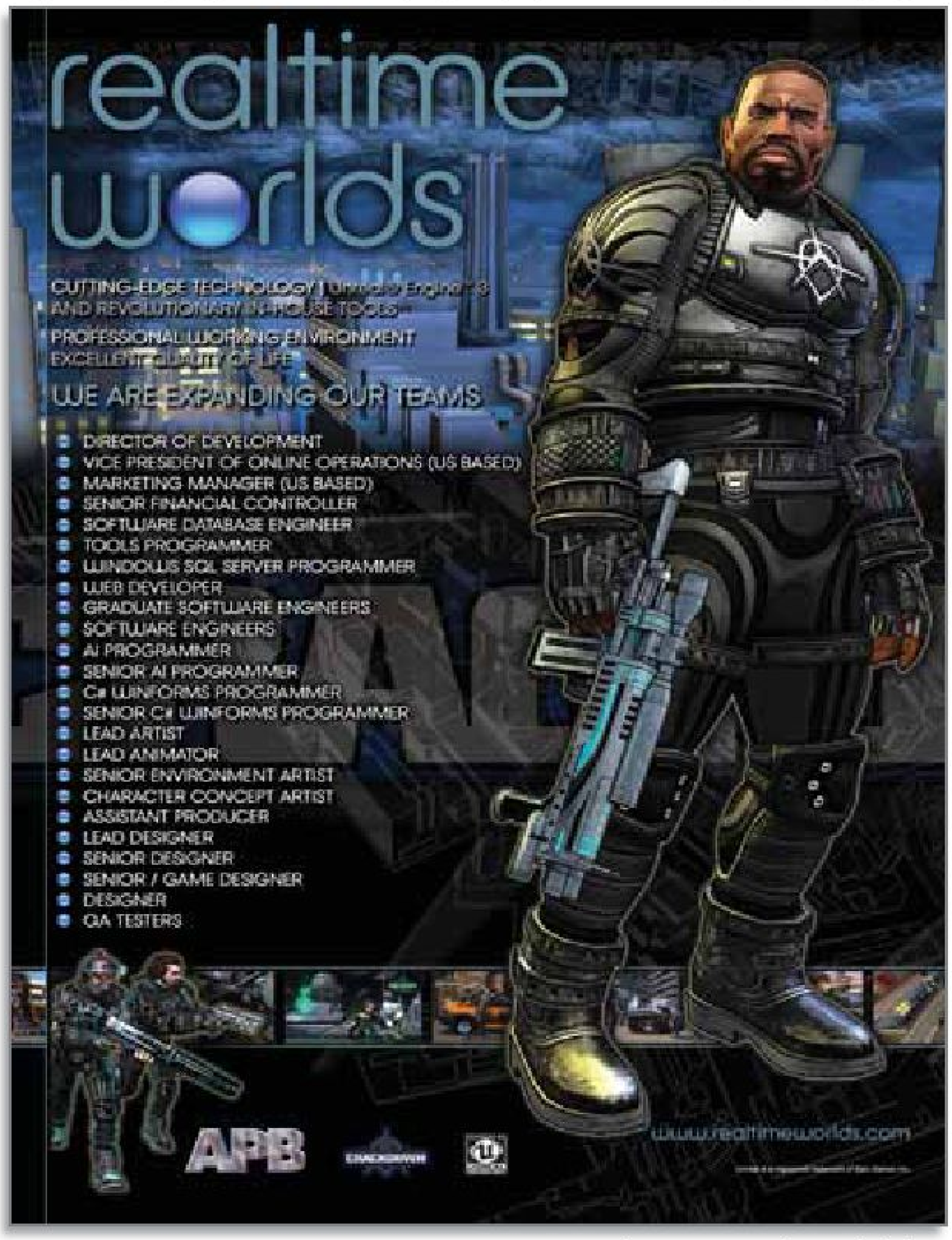

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Tools News

CRI offers free PS3 middleware

CRI has announced that it will be releasing the PS3 version of its FileMajik Pro 'load time reducing' middleware for free to all licensed PS3 developers.

The technology uses CRI's compression and expansion technology to reduce load times to under half of their normal duration, as well as organising where data is written on the disc to minimise seek times. The PS3 version also utilises the SPUs to decompress data with optimal speed.

FileMajik Pro is set to launch in October of this year, and will in addition support Wii, WiiWare, Xbox 360, PlayStation 2, PSP, PC and DS. The PS3 version will be free to licensed developers from that time until March 2010.

It is currently unknown if FileMajik Pro will be localised for Western developers and whether this offer will apply worldwide.

www.criware.com

AUTODESK'S HEAVENLY TOUR

Autodesk and Sony Computer Entertainment Europe are set to hold a series of events about the art processes used in the development of PS3 title *Heavenly Sword*.

Presented by SCEE's Tom Jones, the talks will cover why SCEE chose Autodesk's products and how they fit into the development process, as well as their adoption of the Human IK middleware and the FBX file format. Subscription customers will also be able to attend a 3ds Max or Maya masterclass earlier in the day.

The tour opens in Paris on July 7th, and then continues on to Moscow on the 9th, London on the 11th, Stockholm on the 14th, Frankfurt on the 16th and finishes in Warsaw on the 18th.

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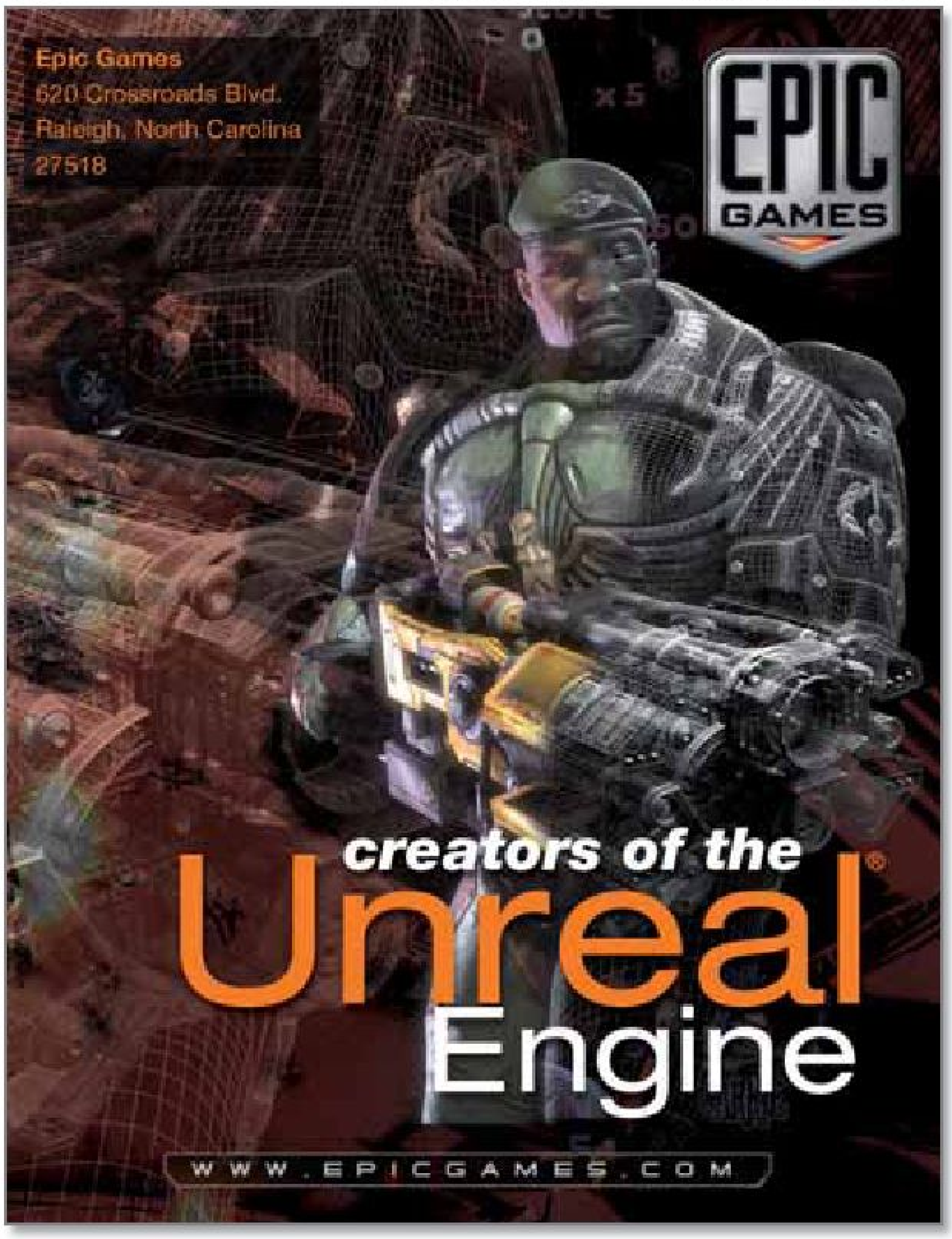

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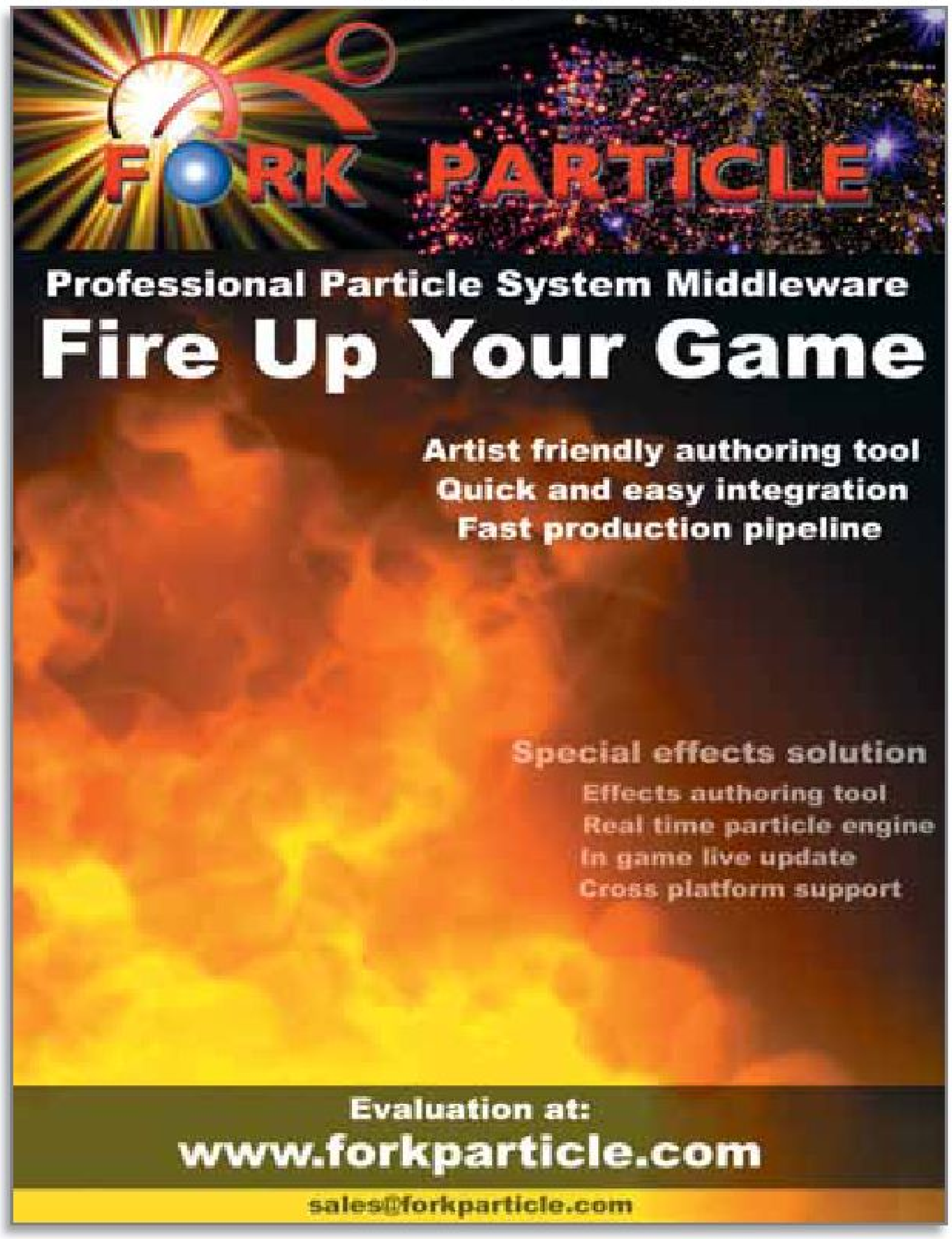

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Tool Spotlight

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PRICE: Available on request
TRIAL: Available on request

Particle systems are an area of games that can easily be overlooked, but gone are the days where you can get away with spawning a few billboards when the player runs in dirt or blows up a building.

Fork Particle addresses those studios who want to have impressive particle effects in their games but don't have the time to spend on building a reliable run-time engine and authoring tool for effects artists. It consists of three main parts: Fork Particle Studio, Fork Runtime SDK and the Fork Live Tuner.

Fork Particle Studio allows artists and designers to author effects in realtime, allowing both sprites and geometry particles to follow paths and spawn from surfaces, also featuring forces authoring, keyframe animation, Nvidia PhysX effects, super emitters, emission volumes and hardware shaders. The editor's particle dynamics, rendering and scene object display can be overridden to match exactly with your engine, and a plug-in system allows custom importing and exporting of data. It also integrates smoothly with Perforce and Sourcesafe to facilitate project management and external collaboration if outsourcing work overseas.

Critically, the Fork Runtime SDK is cross-platform, designed to run well on both PCs and consoles. The developers estimate that it usually takes less than a week to integrate Fork Particle into a development pipeline, whether the engine be in-house or a third-party solution, thanks to integration tutorials and technical support.

The third and final part of the Fork Particle package is the Fork Live Tuner, which bridges the Particle Studio and the Runtime SDK by letting effects artists and designers finalise and tweak their designs inside the target game engine.

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Services News

Babel bought, but it's 'business as usual'

Popular games QA and testing company Babel Media has said that its recent acquisition by global outsourcing giant Quatrro won't disrupt the business, but will instead allow it to start offering a wider range of services to clients.

Earlier this month the company announced it had been bought by BPO firm Quatrro, and that the investment in the company also meant the introduction of a new CEO – 11-year EA vet Richard Leinfellner – as former MD Algy Williams takes on a biz dev-focused role as non-executive director.

Babel will retain its name and branding and still focus exclusively on QA, localisation, testing and outsourcing for games and interactive entertainment - but now as a division of Quattro.

Speaking to *Develop* exclusively ahead of announcing its sale with Quatrro, Babel's sales and marketing director Keith Russell said that the firm's strengthened management team now has a two year plan in place to widen the services it provides.

These include new game art services and more integrated functionality testing for developers – with other announcements of its beefed up services due in the months to come.

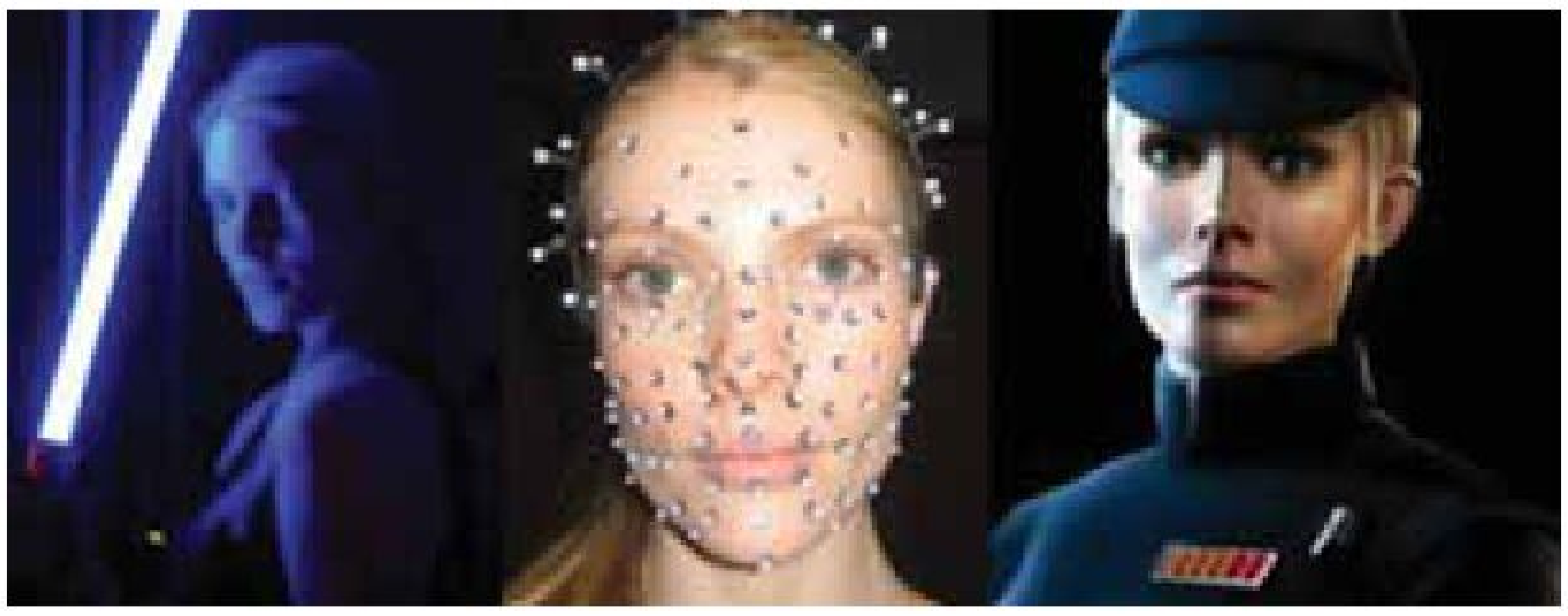
"The move gives us deep pockets to move the company to the next stage. It also gives us the scale to grow," said Russell. While Babel has bases in India, Montreal and Brighton – all of which will remain, he added – Quattro's global scope means that Babel can now open up and tap into talent bases where its new parent already has a footing.

"Quattro have offices in India, China, Chicago, San Francisco, Singapore – they have the exact scale we can latch on to."

Financial terms of the acquisition have not yet been disclosed, and Russell is keen for both the firm's clients and rivals to know that the investment is in Babel's future, "not the management team cashing out and buggering off to the Bahamas".

He said: "The move is a conscious decision to remove the VCs from the equation and pair up with a company we can piggyback off as we grow properly, and ultimately, gain a lot of clout."

www.babelmedia.com



SIDE UNLEASHES THE FORCE

When LucasArts decided that Juno Eclipse, one of the major characters in its massive-budget new Star Wars game *The Force Unleashed*, was to have a British accent, it turned to Side to find the right voice and motion capture actor for the job. They studied the character description and selected a shortlist of 20 candidates, who were assessed for their facial likeness, physical and vocal performance. From that process, actress Nathalie Cox was chosen to play the role of Juno.

"LucasArts' approach to this process was clearly driven by their vast experience in film production," said Side MD Andy Emery. "Investing in this casting process to select a single lead character may seem extravagant for a game production but this would be quite usual for a film."

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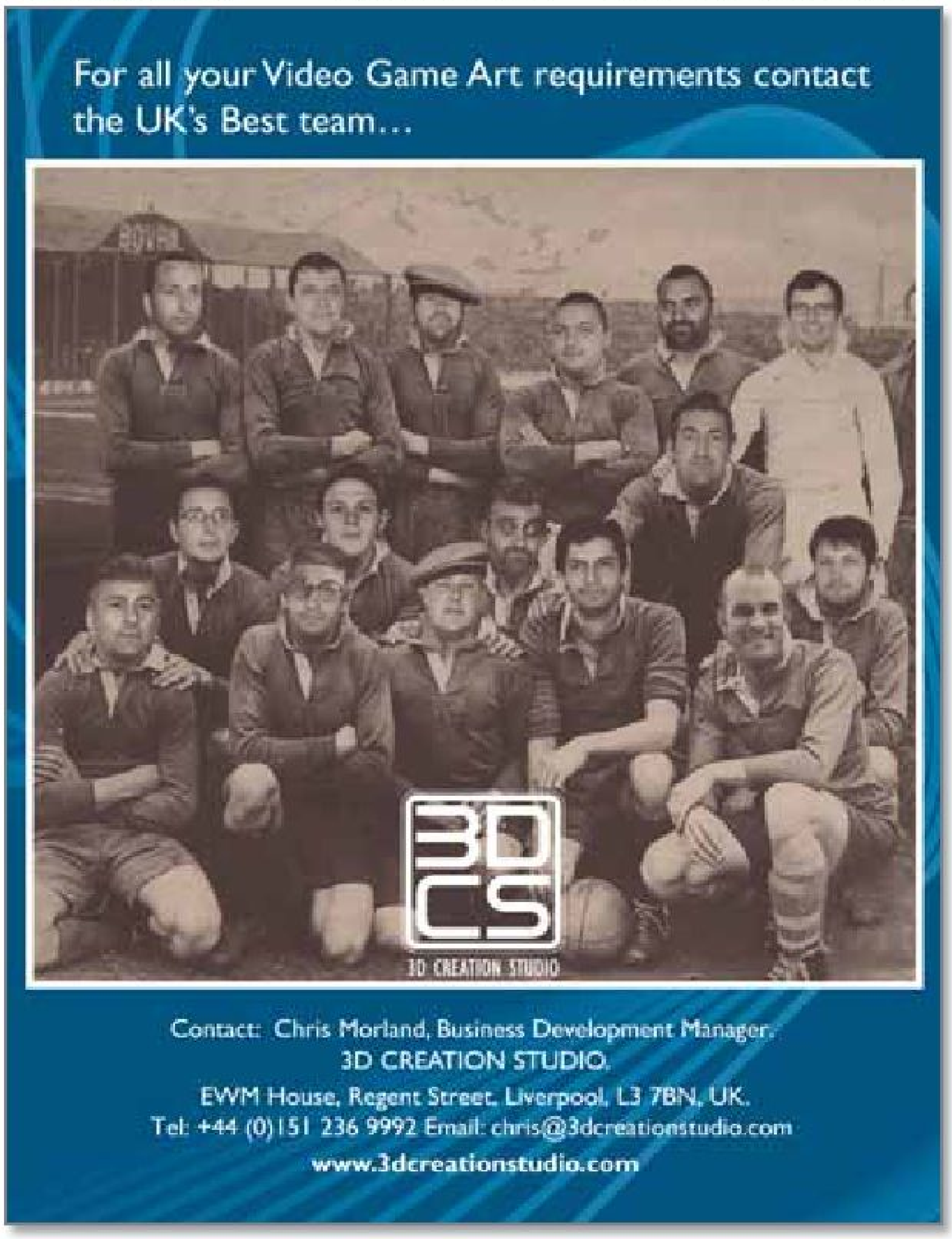

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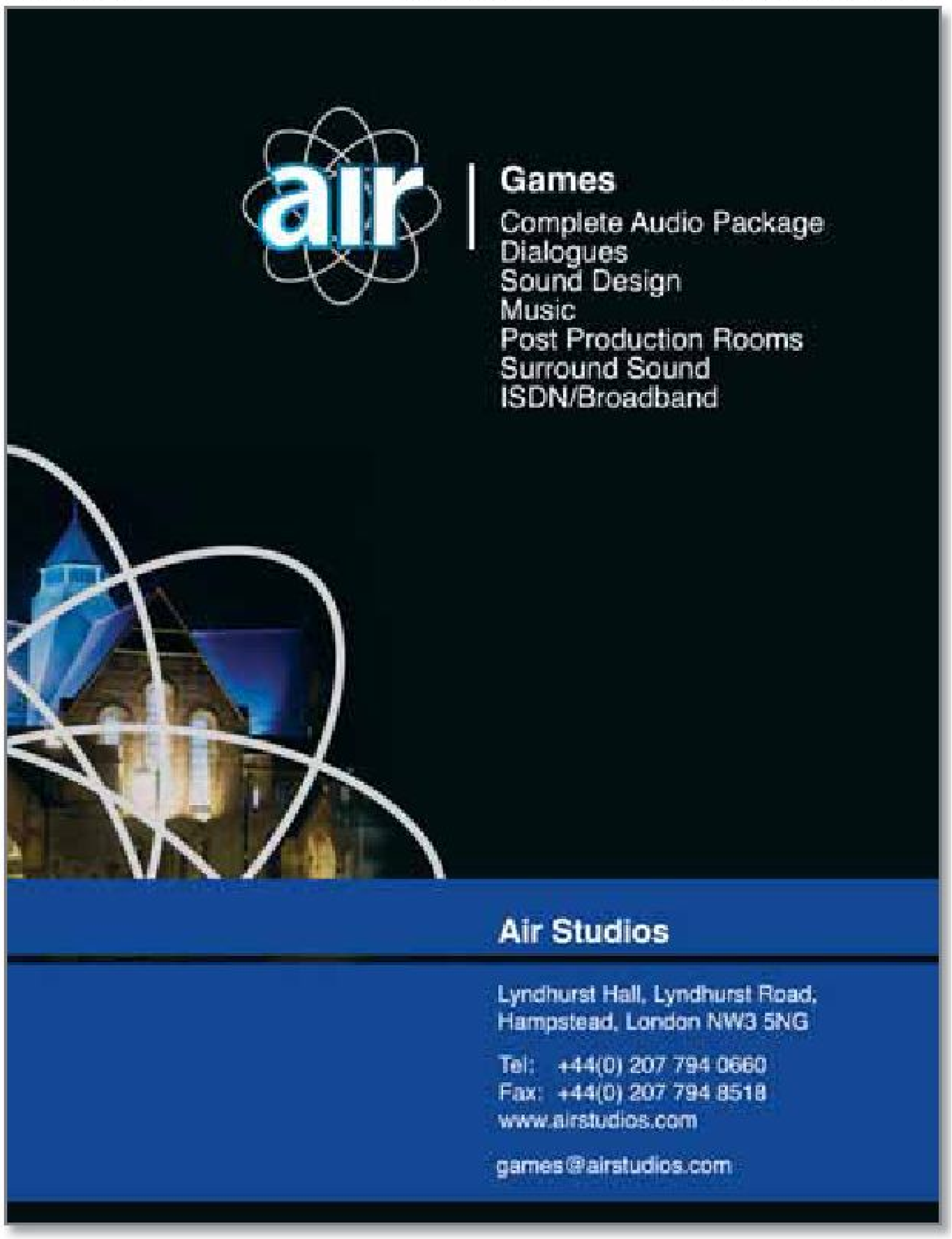

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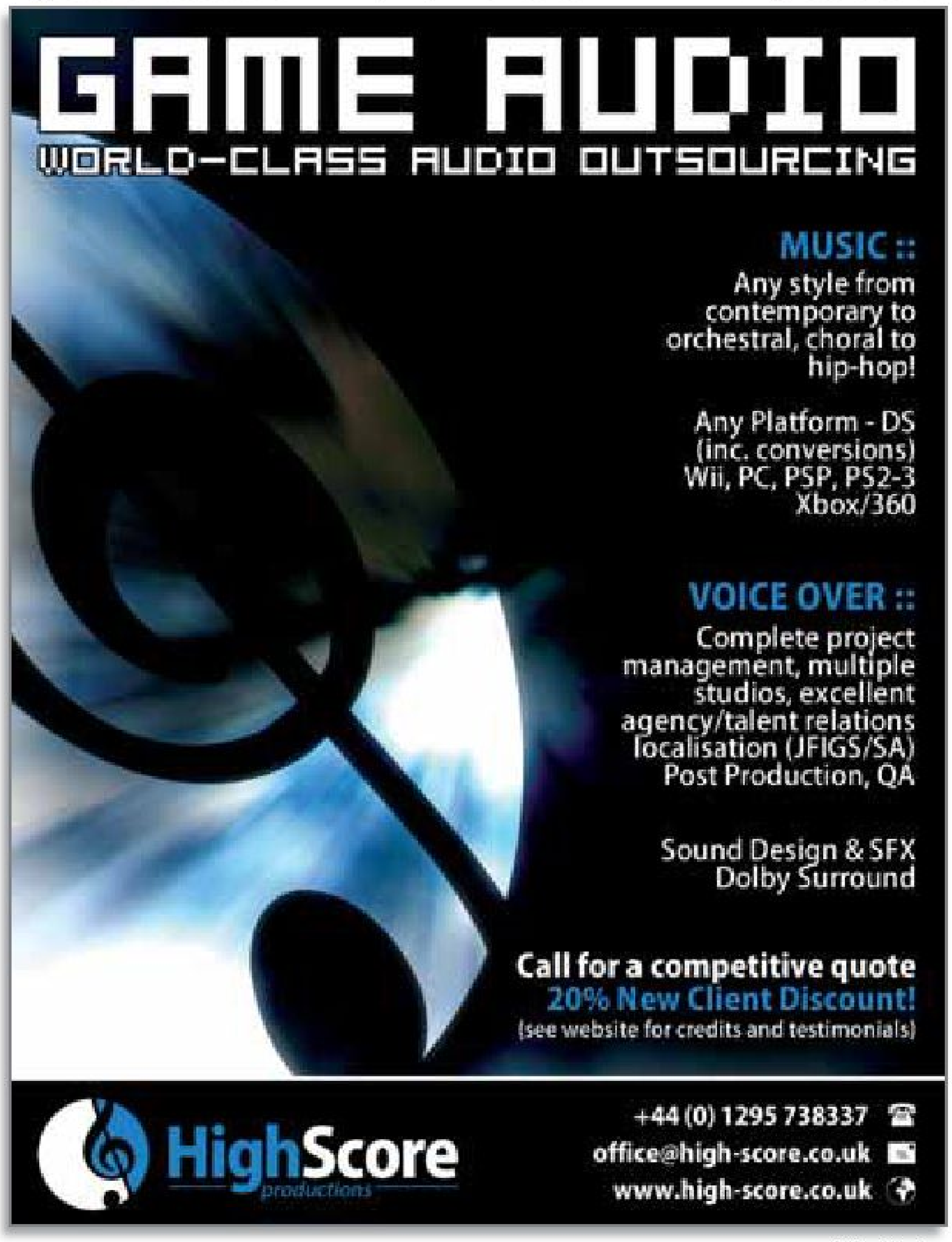

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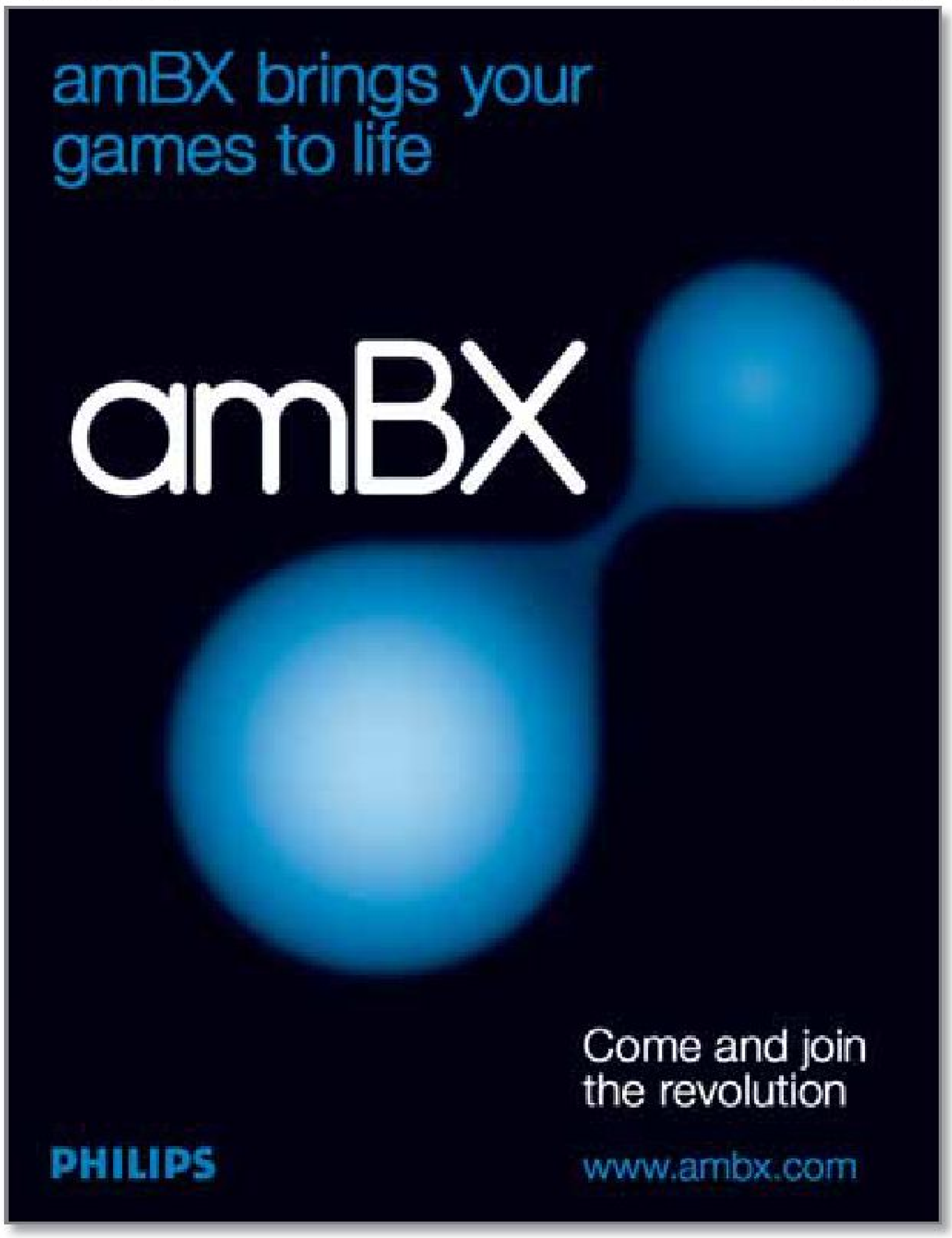
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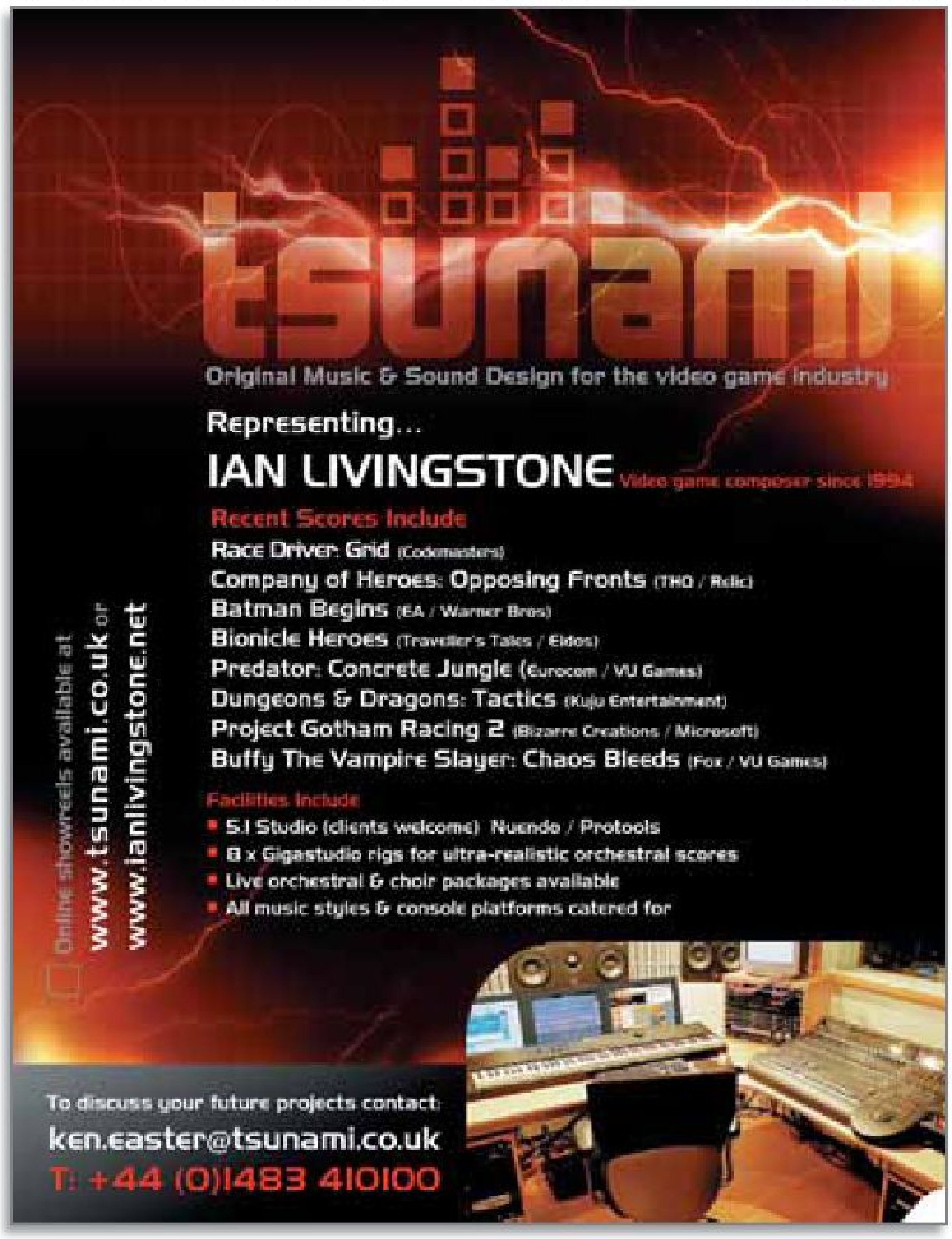

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Services Spotlight

HIGH SCORE PRODUCTIONS

FACTFILE
Area of expertise: Audio for games
Location: Oxfordshire
Founded: 2004
Number of Employees: 2
W: www.high-score.co.uk
E: office@high-score.co.uk

Key personnel:
Hugh Edwards (co-founder), Jeremy Paul Carroll (co-founder)

Recent clients:
Eurocom (*Euro 2008*), Oxygen Interactive (*Entertainment/Sports Quiz*), Slam Developments (*Chess Crusade*), ITV Granada (*Wags Boutique, Formula 1*), Code Monkeys (*Postman Pat*), Distinctive Developments (*Euro 2008*), Bethesda (*The Elder Scrolls IV: Oblivion*)

There's something about Oxfordshire that's made it quite the little game development industry hub – a new Guildford or Leamington, perhaps. In addition to studios such as Gusto, Rebellion and Fuse, it's also home to High Score, providing audio services to not just the games industry but also the broadcast sector, with clients such as ITV Granada and Dazed Film & TV using the firm's services.

It offers composition services from standard genres such as orchestral all the way to New Age, electronica and folk, as well as speech and vocal recording, orchestration, DirectX 9 programming and composition, MIDI programming, live recording and even telephone ringtones. The studio also handles voice-over recording, casting, voice and script direction and even localisation, and has strong links with the VO industry's leading agencies to help not only secure top professional and semi-professional talent, but also those tantalising famous voices.

Asked why a customer would choose High Score over any of the other myriad of audio houses out there, co-founder Hugh Edwards says: "The reason people seem to choose us is that we have a very high quality bar and a fantastic eye for detail. Everyone who uses us comes back time after time – and yet we have very competitive rates because we are not based in London and so don't need to cover such extreme outgoings which result in higher costs."

The studio also offers a wide range of post production services, such as remixing previously mixed tracks into new pieces, overdubs, replacement of existing tracks, as well as offering the opportunity to clean up tracks by removing hiss or crackle and tuning up weak areas of old recordings. It also does compiling, editing and mixing of Foley tracks - streaming directly to Pro Tools - and offers a compilation building service to mix together previously recorded constituent tracks.

"We believe at High Score that the most important value in your company is your staff, the excellence in their abilities and skills and the care that is taken over the work with great attention to detail. We believe this is what makes us unique, that it shows in our work and that it's why so many people keep coming back for our services."

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Other related courses available:

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BSc (Hons) Computer Animation and Visualisation

For further information on any of the above courses please contact:

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THE BYRONIC MAN

Simon Byron is getting tired of games reviewers whingeing about publisher and developer requests …

You can say what you want about *Metal Gear Solid 4* – unless, that is, you've been playing the game ahead of its street date. Yes, this month's chief villain: Konami, for daring to request that in return for unrestricted access to *Metal Gear Solid 4* ahead of its public release, those reviewers let into the inner circle had to adhere to a few rules about what they could and couldn't say. Until the game was released, whereupon they could say what they liked.

Seems reasonable enough, right? Apparently not: it's up there with chucking your kids off a balcony in Crete, claiming a few extra quid here and there if you're an MP, or the Holocaust (if it happened).

That's according to the Internet, of course, which over recent weeks has decided that its late night *tête-à-têtes* with the PR industry should be regurgitated publicly in tedious detail – and often in all caps – to anyone who can be bothered to listen.

As indignant rage goes, these games sites moaning about publishers dictating what they can and can't write is a bit like prostitutes claiming to have been raped – sure, we know it's wrong and we're very sorry. But, really, you've been asking for it for a long time.

The chief complaints levelled during *Metal-Gear-Solid*-Gate were that Konami had asked reviewers not to mention the length of the cut-scenes, nor the size of the installation. Granted, both were strange requests – I'm assuming those rushing out to buy *MGS4* on the PlayStation 3 had sat through both lengthy in-game movies before (in any previous *Metal Gear* game) and an installation (say, the eight minutes prior to *GTA4*, for example) – but, hey, it's Konami's ball, so they can play with it how they want.

But not according to some games websites, who seemed to think that access to pre-release code is something that should fall under some sort of freedom of information act.

US magazine *Electronic Gaming Monthly* turned its inability to critique a game without referring to numbers – the cutscenes are 90 minutes long, and you need to install the game for seven minutes, 90 per cent best game ever – into some kind of tub-thumping war on PR terror.

MTV Multiplayer – which seems to have unilaterally installed itself as the moral beacon of the games industry – fanned those flames through a protracted 'reviews week', in which the disgusting operating practices of the games industry were blown wide open. In one revelation that will shock the games industry to its very core, the website reprinted an email from an evil PR person (anonymous) asking a journalist (anonymous) whether he could hold back a review of a game (anonymous) if it was going to score less than nine out of 10. Take that, The Man!

> ***"One website printed an email from an evil PR person (anonymous) asking a journalist (anonymous) whether he could hold back a review of a game (anonymous) if it was going to score less than nine out of 10. Take that, The Man!"***

The site went as far as to respond with a draft games reviewers' 'Bill of Rights'. Aside from dictating when and how versions of games should be "made available" to reviewers, it also insists that online modes are made playable during the reviews process, and that developers or publishers are not present while a game is reviewed.

Now, there are obviously arguments for and against all these points.

Personally, I think reviewers should be made to pay for their games.

Asking someone to suggest whether it's a title worth shelling out 50 quid for when they, on the whole, never buy their games at all is a bit like asking David Blunkett whether it's worth going to Paris to see the Mona Lisa.

But as for whether or not journalists should be accompanied – well, it's just the developer or publisher wishing to make sure whoever's about to review the game spends adequate time playing the bits they consider to be important. I know all games reviewers are honest, thorough and incorruptible and that they'd definitely never spend just 15 minutes reviewing a game that's taken over two years to create (despite the fact you can conclusively prove this actually happened by presenting them back their log-in details) – but it's good to be sure. Because we wouldn't want that to happen again, would we, Richard…?

So let's stop this constant sniping, and drop the sixth-form politics. If you don't like what one publisher's asking you to write about – simply don't do it. But don't pretend you're making some sort of Suffragette protest when you're simply throwing your toys out of the pram.

simon@thetriforce.com

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AUGUST 2008

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BUILD Feature: 3D modelling
BUILD Guide: UI Engines
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BUILD Feature: User interface tools
BUILD Guide: MMOG Engines

OCTOBER 2008

Publication date: October 6th
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Publication date: December 15th
BUILD Feature: QA, Testing & Localisation
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